AMERICAN GAS JOURNAL

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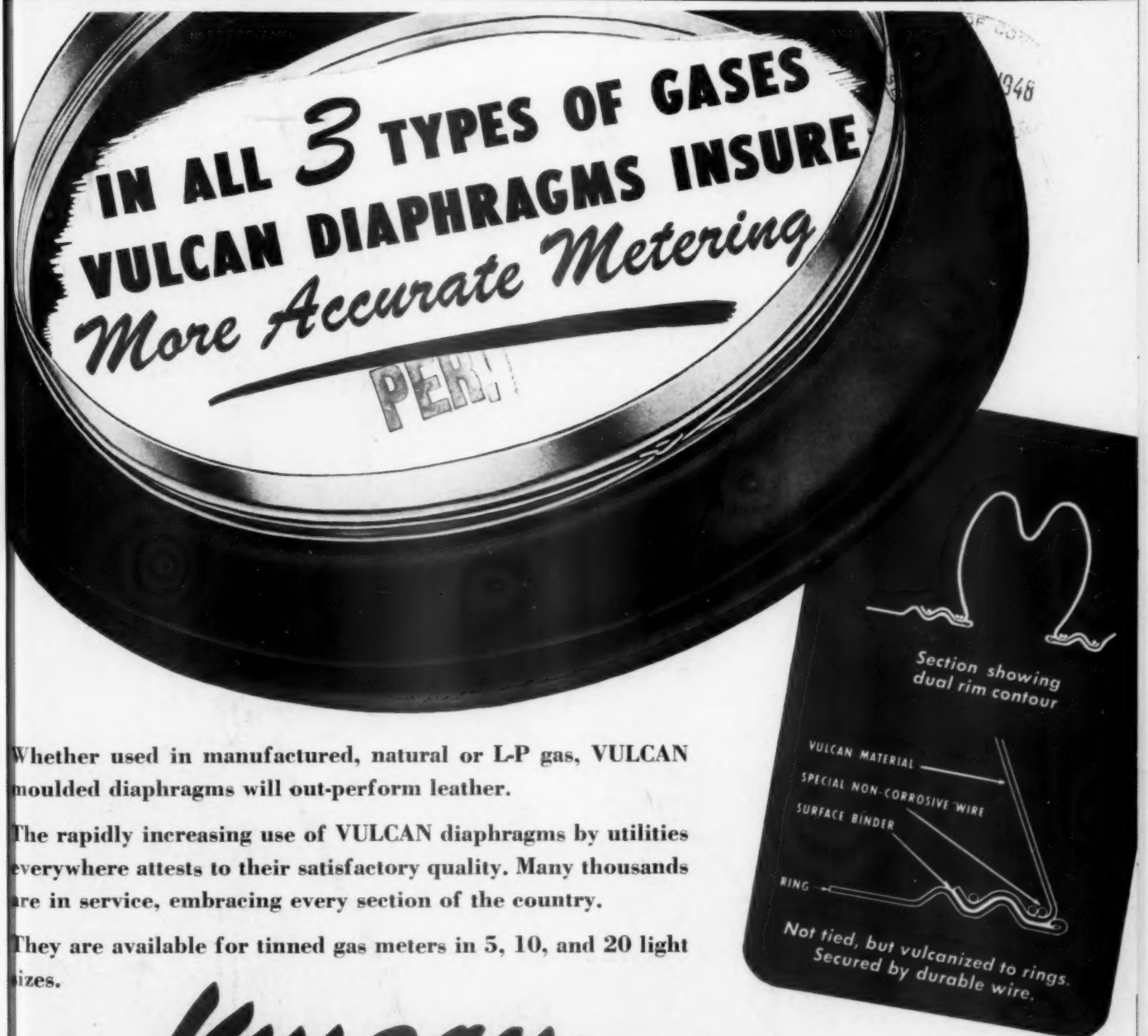

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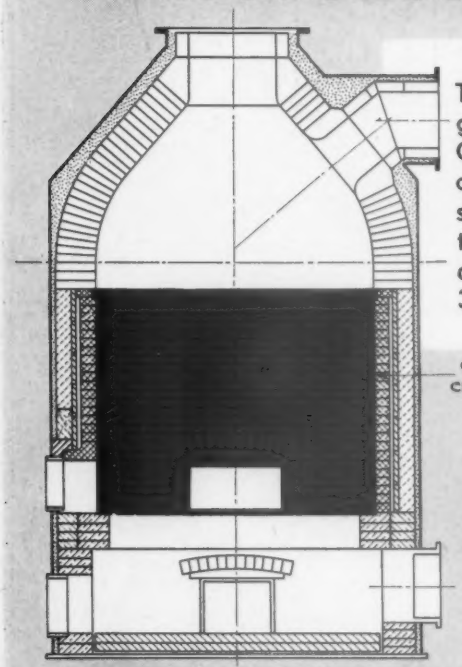
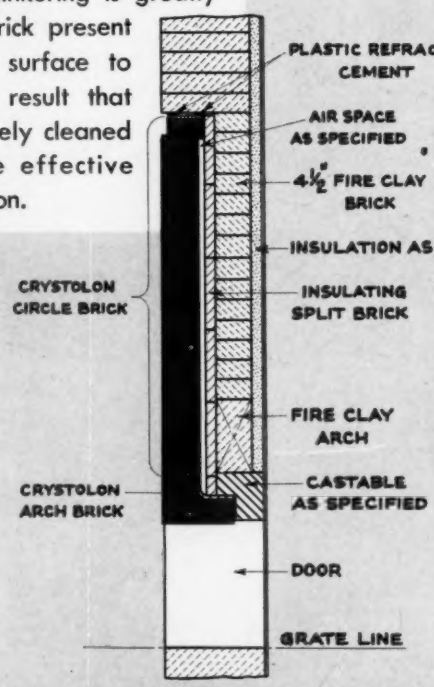
Generator lining pays for itself in One Year... when long-lived CRYSTOLON Brick are used...



Sectional drawing of gas generator lined with CRYSTOLON refractory shapes.

The most successful refractory for lining gas generators is silicon carbide which Norton Company manufactures under the trade-mark of CRYSTOLON. CRYSTOLON brick and shapes are helping many plant superintendents in three ways: 1. increased plant capacity; 2, decreased maintenance costs; 3. long lining life.

When CRYSTOLON brick are used "downtime" for clinkering is greatly reduced. These brick present an impenetrable surface to clinkers with the result that walls are completely cleaned leaving a large effective furnace cross-section.



Cross-section of gas generator wall showing details of refractories including CRYSTOLON interlining.

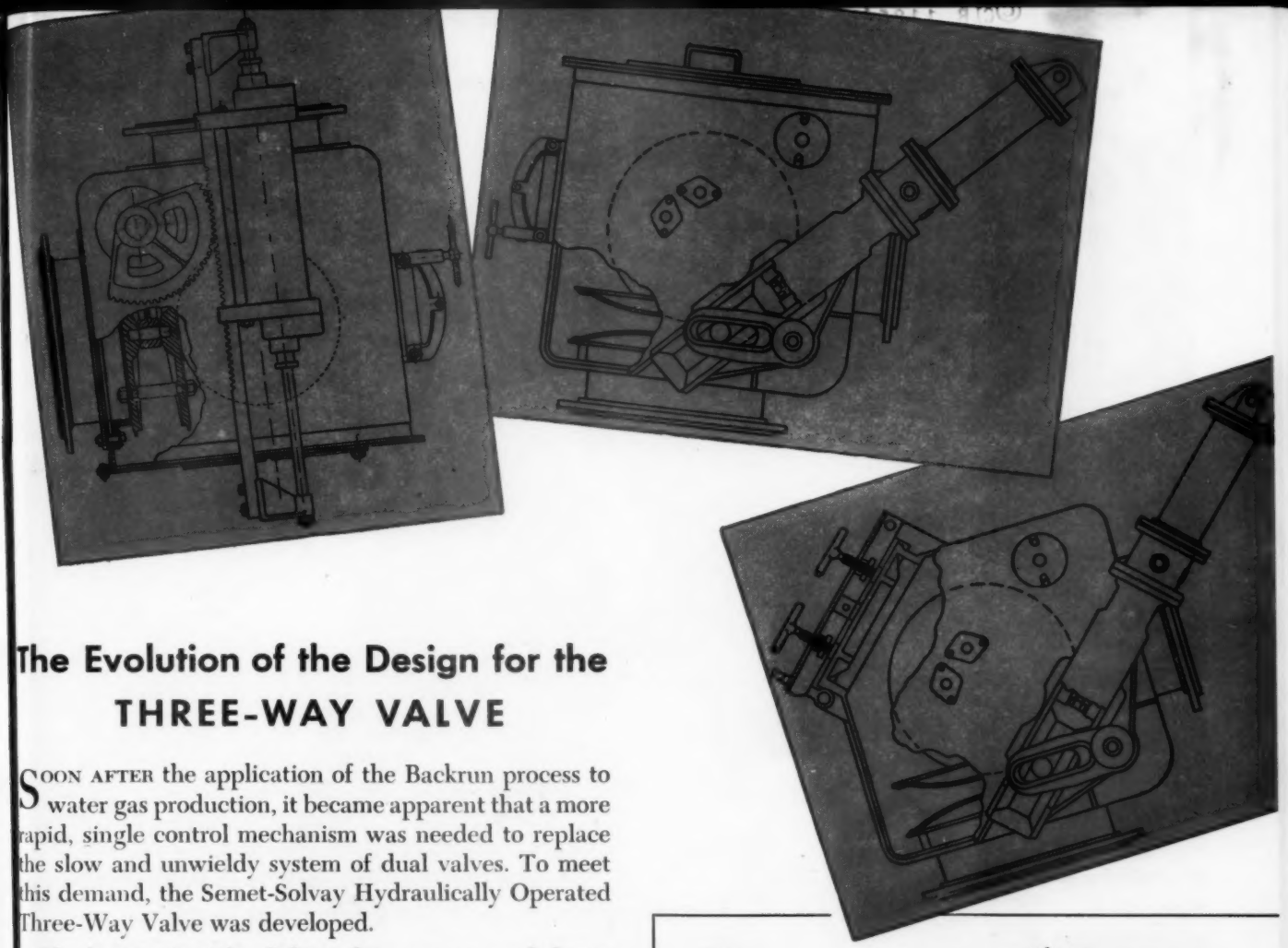
CRYSTOLON brick decrease maintenance cost by greatly extending periods between repair jobs and by reducing cleaning time. Because of the dense, hard surface of CRYSTOLON brick it is only necessary to break the clinker ring in one place and the entire ring will then fall free. CRYSTOLON linings often pay for themselves the first year by savings in cleaning costs alone.

The results which may be expected from the CRYSTOLON lining will vary with different operating conditions. In some cases, a total operating time of 8000 hours is considered satisfactory. Over 22000 hours have been attained without major repairs.

NORTON COMPANY

Worcester 6, Massachusetts

AMERICAN GAS JOURNAL, December, 1947. Vol. 167, No. 6. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa., Executive and Editorial offices at 53 Park Place, New York 7, N. Y. Entered as second-class matter October 7, 1928, at the post office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U.S.A.



The Evolution of the Design for the THREE-WAY VALVE

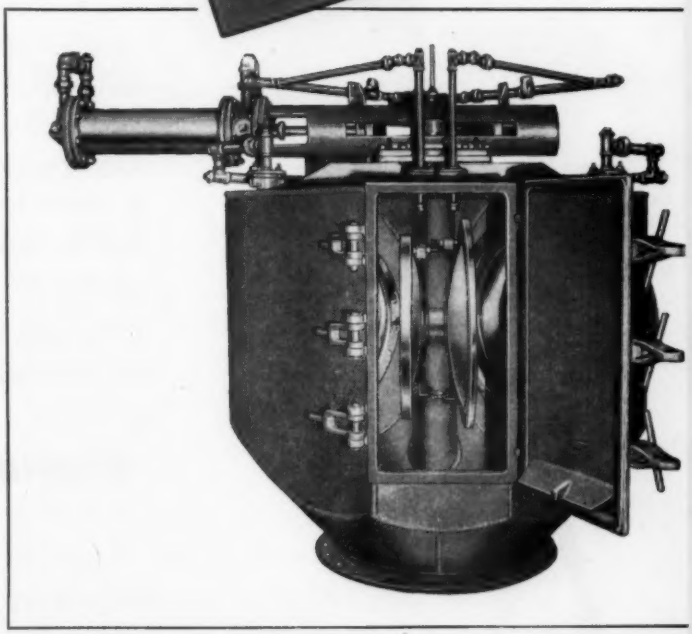
SOON AFTER the application of the Backrun process to water gas production, it became apparent that a more rapid, single control mechanism was needed to replace the slow and unwieldy system of dual valves. To meet this demand, the Semet-Solvay Hydraulically Operated Three-Way Valve was developed.

The basic principle of this valve was so sound that it has been retained down to the latest design and the valve has become standard equipment on the modern water gas machine. This principle consists of two discs carried by an arm and shaft mounted within a suitable housing and arranged to swing through an arc of 90°, thus alternately opening and closing the two gas inlets to the valve housing.

Semet-Solvay engineers were not satisfied to keep the details of design static, even though the valve came into wide acceptance upon its introduction to the gas industry.

The first major improvement consisted of replacing the rack and quadrant drive with a cross-head, roller and pin, actuating a slotted lever attached directly to the vertical shaft of the valve. This provided a simplified arrangement with more positive closure of the discs.

Later improvements were aimed largely at adapting the valve to heavy oil operation. Revisions were made to the internal spray system; a full height clean-out door was added to allow easy access for inspection and cleaning; and a conical bottom outlet was provided to prevent any building up of deposits in the valve housing.



SEMET-SOLVAY ENGINEERING DIVISION
40 RECTOR ST., NEW YORK 6, N.Y.
ALLIED CHEMICAL & DYE CORPORATION

This cast iron gas main —America's oldest— was laid in Baltimore 113 years ago. It is still rendering satisfactory service.

Cast iron pipe, laid in 1834 in Baltimore by the first gas company to be granted a franchise in this country, is still in service. The photograph above shows America's oldest gas main in excellent condition when it was uncovered for inspection on its 100th anniversary. It is bell-and-spigot pipe. When higher operating pressures, and the use of dry, natural and mixed gas were introduced, mechanical joint cast iron pipe was developed to meet the need for a bottle-tight joint under *all* working pressures.

Now mechanical joint cast iron pipe has been standardized with all accessories and fittings interchangeable.

STANDARDIZE ON...

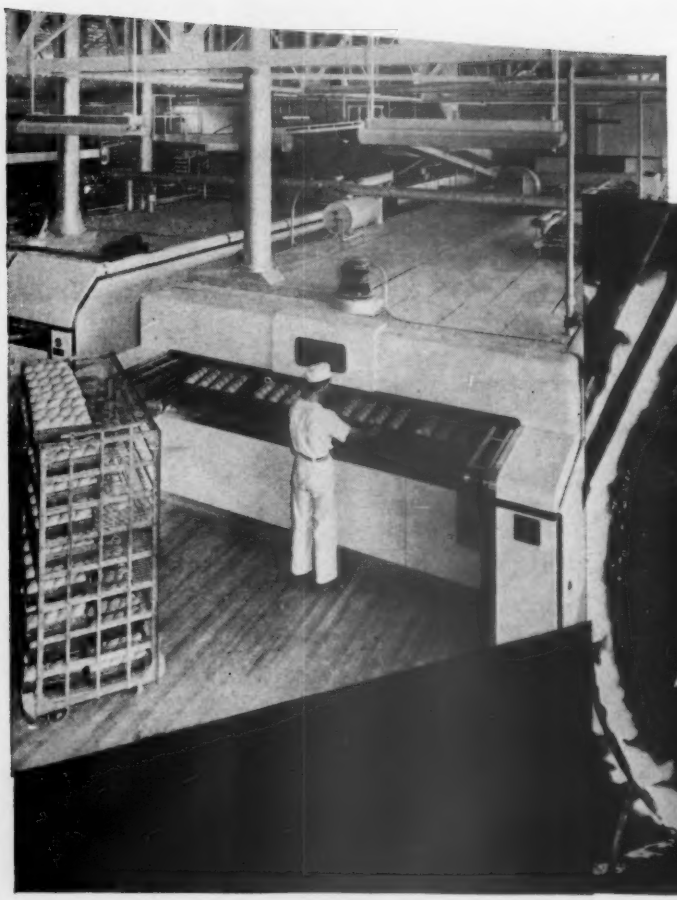
CAST IRON

Standardized **MECHANICAL JOINT**

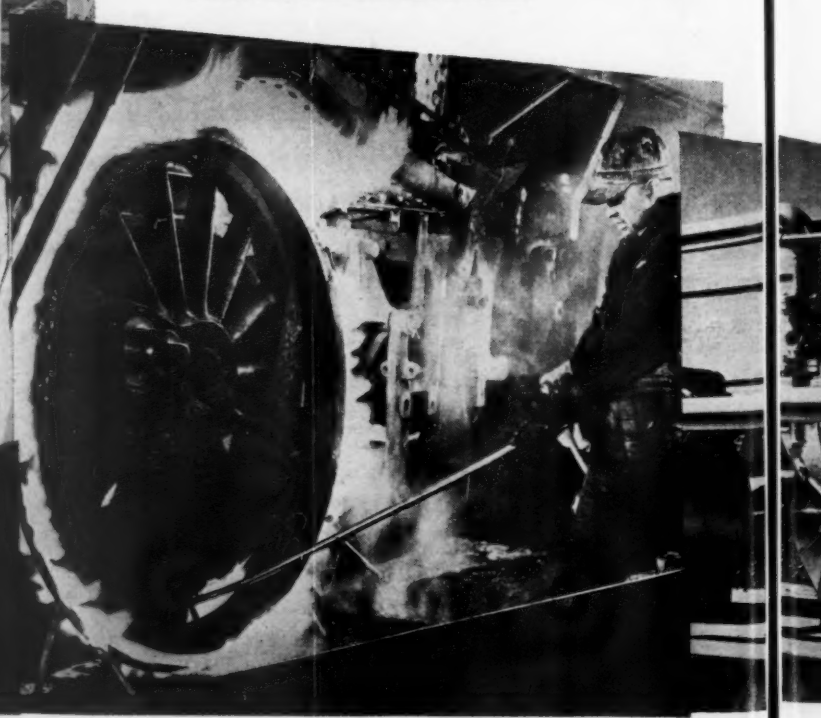
PIPE

One of the largest gas companies in the Middle West, in announcing that all new mains, laid in connection with a change-over to natural gas, would utilize exclusively cast iron mechanical joint pipe, gave the following reasons: "An estimated 25 per cent more length of mains can be laid per week. Many other advantages have accrued, including less equipment necessitated for the installation, smaller crews, and bottle-tight long life." For similar reasons, other important gas utilities are standardizing on *standardized* mechanical joint cast iron pipe. Cast Iron Pipe Research Association, Thomas F. Wolfe, Engineer, Peoples Gas Bldg., Chicago 3, Illinois.

...for cream puffs... and Thanks



Thanks to GAS, the modern bakers now fire ovens with quick, clean fuel—bake cream puffs light and salable. And bakers find there's no fuel so flexible. It takes care of every unusual heating process—bakes bread, rolls, pastries or all other specialties which vary with each neighborhood's demands and customs.



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GAS which bakes perfect cream puffs is equally important to locomotive building and maintenance, textile manufacturing processes, laundering, television tube production, restaurant and hotel operation, lithographing, can and glass jar manufacturing, hospital cooking and sterilizing—almost every industry you can think of which contributes to public need and public welfare.

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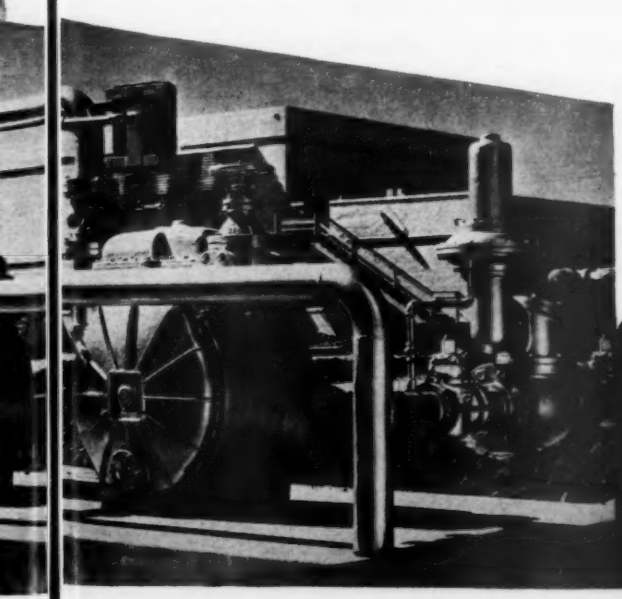

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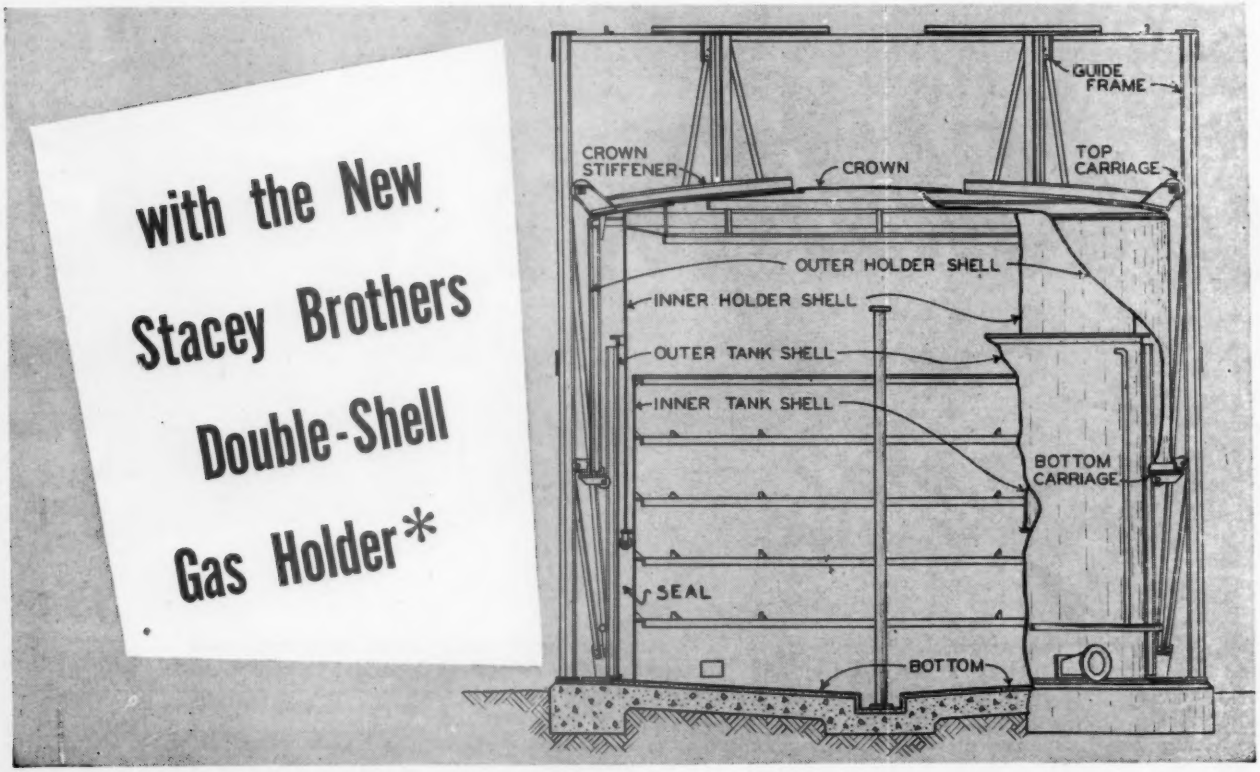
IN THE STORAGE OF WATER-SOLUBLE PROCESS GASES



Here's a single-lift gas holder that's an outstanding development for the storage of process gases. Regardless of the sealing fluid used, there's absolutely no chance of contamination by rain water—the design takes care of that.

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The new Double-Shell Gas Holder is one more proof of Stacey Brothers' continuing leadership in providing storage capacity for gases. No matter what the limitations or how exacting the restrictions, we're ready to design, build and erect the gas holder exactly suited to your requirements. Let us know your needs—we'll carry on from there. No obligation, of course. May we hear from you?

*Patents applied for

STACEY BROTHERS GAS CONSTRUCTION CO.
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5535 VINE STREET · CINCINNATI 16, OHIO

Stacey Brothers
ALL-WELDED GAS HOLDERS

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The U.G.I. mechanical generator has been, and still is, under continuous development. Set capacities have been increased from about 5,000 Mcf per day, with original design, to over 11,000 Mcf per day (heavy oil operation) in the present apparatus.

139 U.G.I. mechanical generators have been installed or contracted for since 1924—59 in 27 utility plants and 79 in 8 chemical plants.

UNITED ENGINEERS & CONSTRUCTORS INC

NEW YORK PHILADELPHIA CHICAGO

AMERICAN GAS JOURNAL
DECEMBER 1947
VOLUME 167 No. 6

Texas-California Pipe Line Completed to Los Angeles

By
Fred A. Herr

WITH more than 400 gas industry executives from five western states, and state, city and county officials from California, Arizona and Texas lookng on at 4:35 p.m., November 13, Lieut. Gov. Goodwin Knight of California, at the formal request of LeRoy Edwards, vice-president of the Pacific Lighting Corp., turned the wheel of a gate valve at Santa Fe Springs, Calif., and admitted the first gas from the Texas-California pipeline into the distribution mains of the Southern California and Southern Counties Gas Co.

The turning of the valve marked the conclusion of ceremonies which celebrated the formal completion of the major portion of the 1200-mile pipeline built at a cost of $70,000,000 by the El Paso Natural Gas Co. of El Paso, Tex., and Southern California Gas Co. and Southern Counties Gas Co. of Los Angeles.*

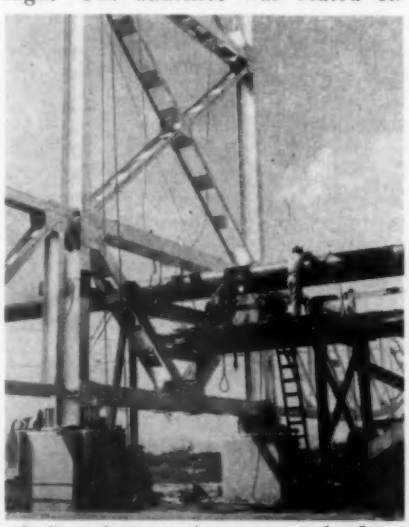
Valve Turning Ceremony

Southern California and Southern Counties Gas Co., which financed and built the 212.6 mile, 30-inch, $16,000,000 portion of the line from Blythe, Calif., on the Colorado River, to Santa Fe Springs, collaborated with the El Paso Natural Gas Co. in staging the ceremony. The event took place on the grounds of Pacific Lighting Corporation's compressor station at the northern edge of the Santa Fe Springs oil field, 12 miles southeast of Los Angeles.

Significant, historically, was the fact that the terminus of the line built at huge expense to bring natural gas more than 1000 miles, is in an oil field where 25 years ago natural gas from oil wells was blown into the air at the rate of millions of cubic feet daily for lack of a market. In the early 1920's Santa Fe Springs ranked as the largest petroleum producing field in the world, with a daily production at peak of more than 250,000 barrels per day. Some wells at that time "blew" gas into the air at the rate of 30,000,000 cubic feet per day.

400 in Attendance

The gate valve on the coupling tieing the western end of the Blythe-Santa Fe Springs 30-inch line to the main casing of the Southern California distribution system is mounted on a concrete platform some 2½ feet high. The audience was seated on chairs placed directly in front of the western terminus of the pipeline. An overflow crowd exceeding 400 occupied chairs, or stood in the back, while some sat or stood on the huge round casing of the 30-inch line itself, a portion of which runs along the surface before it veers to connect with the valve.



Pushing the 26 inch pipe over the San Pedro River bridge in Arizona.

The audience was composed of officials, engineers and other personnel of the three gas companies and of other gas companies from San Diego to San Francisco; heads and representatives of oil firms and companies that supplied material for the project; and representatives of nearly all counties and municipalities in Southern California, and of business firms in the northern and southern sections of California, and from Texas, Arizona and Utah.

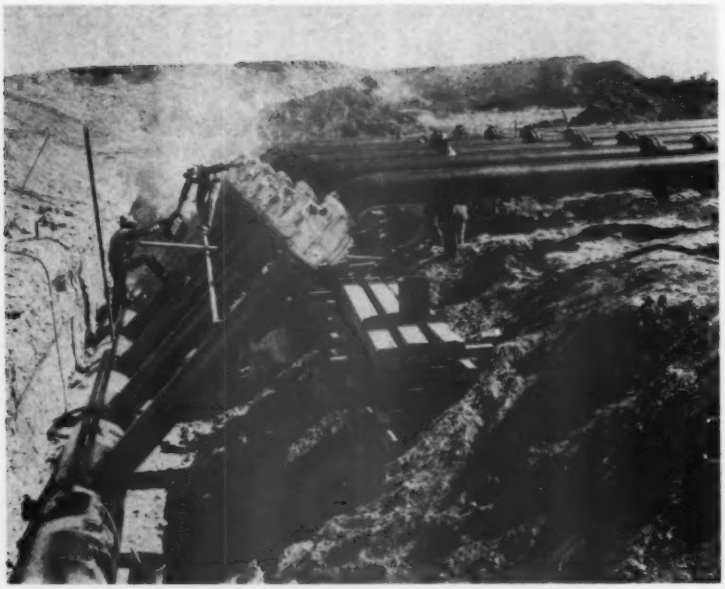
F. S. Wade Presides

F. S. Wade, president, Southern California Gas Co., served as master-of-ceremonies. In his introductory remarks he reviewed the reasons why the pipeline was built and the results anticipated from the increased load it will make available to the two Los Angeles utilities.

Mr. Wade then introduced Arthur F. Bridge, president, Southern Counties Gas Company.

Mr. Bridge emphasized the urgency that attended the completion of the pipeline. He pointed out that 90% of the demand in Southern California is for natural gas. He cited the big variations in demand there—as much as 15 million cubic feet per

See articles January 1946 and August 1946 on location and financing of this system.—Ed.



Natural gas metering system where Texas-California pipeline crosses state line into California. The pipeline will ultimately have a capacity of 305,000,000 cubic feet of gas a day.

degree of temperature and quoted figures on the demand for space heating and total for all purposes which aggregates 800,000,000 cubic feet. Urgency, Mr. Bridge asserted, required that the pipeline be completed before December 1, 1947.

He introduced various persons whose firms had contributed materially to the success of the project. Among these were: Alden Roach, president Consolidated Steel Corp., which firm erected a complete new steel plant to produce hydraulically expanded pipe; Walter Mathis, president, Geneva Plant of the U. S. Steel Corp., in which the steel plate was manufactured; Harold Price of H. C. Price Co., Bartlesville, Okla., which constructed the line; and representatives of Pittsburgh-Des Moines Co., which designed and installed the various bridges that carry the pipeline over five rivers.

Paul Kayser Speaks

Introduced next was Paul Kayser, dynamic president of the El Paso Natural Gas Co., whose firm sponsored the construction of the line from Eunice, N. M., to the Colorado River at a cost of $54,000,000.

"This is an historic occasion," Mr. Kayser said. "When this valve is turned, gas from Texas will flow into the Southern California feeder lines and this will truly represent a mingling of the spirit, the enterprise, goodwill and progressiveness of the people of Texas and California, and truly marks a milestone in the gas industry. It is typical also of the enterprise and initiative that is still dominant in our country, for by combining our efforts, three great gas companies have made it possible to convert to profitable use large volumes of gas that would otherwise be wasted in Texas for a lack of a market."

Oil Companies Lauded

Mr. Kayser acknowledged the splendid spirit of cooperation that had characterized negotiotions, from the very conception of the project to its conclusion, between Pacific Lighting Corp., Southern California Gas Co., Southern Counties Gas Co. and his own El Paso Co.

He paid tribute also to the various oil companies which are already, or will be in the near future, supplying gas to the pipeline. He introduced F. C. Rice, president, Phillips Petroleum Co., which firm is at present supplying part of the gas flowing through the line. He also referred laudably to the part played by Shell Oil Co., Gulf Oil Corp. and the Warren Petroleum Corp., which firms, under contracts entered into with El Paso Natural Gas Co., will supply much of the future volume of 305,000,000 cubic feet per day the line will carry. He commented also on the wise attitude those oil companies had adopted toward the sale of oil field gas and in recognizing the market for their products the Texas-California pipeline offers.

Many Dignitaries Introduced

Mr. Kayser mentioned the fine cooperation offered by the U. S. Steel Corp. in making a place on the schedule of its Geneva steel plant when the urgency of the pipeline project was explained to officials of the firm. He introduced Gordon LaFay, president of the Cooper-Bessemer Co., which furnished the compressor equipment; and representatives of the Midwest Construction Co., which laid 700 miles of the line.

Others introduced included C. O. G. Miller, former president and now chairman of the board of Pacific Lighting Corp., a revered veteran of the West Coast gas industry, who has been active in the industry for 58 years; Joseph Bell of the Equitable Life Insurance Co., New York, which underwrote the bonds; Fletcher Bowron, mayor of Los Angeles; Ira Rowell, member of the California Utilities Commission; Lester Price, county supervisor of Ventura county (Calif.), and city and county representatives from a number of other areas of California.

Lieutenant Governor Turns Valve

To LeRoy Edwards, vice president and general manager of the Pacific Lighting Corp., at which firm's Santa Fe Springs compressor plant the pipeline terminates, was assigned the honor of introducing the man who had been invited to actually turn the valve.

Mr. Edwards compared the occasion in importance to the celebration which marked the driving of the golden spike at the completion of the first transcontinental railroad. He emphasized the all-western nature of the project—conceived by men of the West, financed by men of the West, built by men of the West, with steel made and fabricated in western plants.

Mr. Edwards introduced the Honorable Goodwin J. Knight, lieutenant governor of California. At the conclusion of Mr. Knight's brief talk, Mr. Edwards escorted him to the huge 24 inch wheel of the valve and said with formal dignity:

"Will you please turn this valve on behalf of the people of the West?"

The California state official grasped the wheel, gave it a tentative turn, and said: "I turn this valve in behalf of the people of this great state and may it bring good and happiness to all."

First Gas Flows at 4:35 P.M.

A few more turns of the wheel, and then a faint hiss became audible

as the first gas escaped from the 30 inch casing into the connecting lines of the Los Angeles County distribution system. As the hiss rose in volume, the audience of some 400 cheered enthusiastically.

That marked the conclusion of the dedicatory ceremonies. The onlookers then repaired, as guests of the gas companies, to a large circus tent which had been erected on the compressor station property, where they found a sumptuous buffet lunch awaiting them.

950 Miles Completed

At the time the celebration was held at Santa Fe Springs in mid-November, a total of 950 miles of the pipeline had been completed from Eunice, N. M. to Santa Fe Springs. Remaining to be installed is 250 miles between Eunice, N. M. and Dumas, Tex. The completed line will extend 1200 miles from the Eunice gas field to the outskirts of Los Angeles. The project when completed early in 1948, will have cost a total of $70,000,000 and represents one of the largest and most difficult undertakings in the history of pipeline construction.

The line will then be surpassed in length only by the 24-inch diameter "Big Inch" and the 20-inch diameter "Little Inch," which were built during the war to carry oil from Texas and Louisiana to the Eastern Seaboard.

The sponsoring gas companies declare the 30-inch line from Blythe to Santa Fe Springs to be the largest high-test pipe ever fabricated and laid. It is also the first major pipeline of any kind to come into California from out of the state.

Gas Originates in Permian Basin

The natural gas—the first of which hissed into the Los Angeles distribution mains on November 13—originated in the Permian Basin area of West Texas, a hitherto untapped source of supply for natural gas distributors. It was pointed out by Mr. Wade of Southern California Gas Co., Mr. Kayser of El Paso Natural Gas Co., Mr. Edwards of Pacific Lighting Corp., and several other speakers at the November ceremonies at Santa Fe Springs, that before the El Paso Co. built gathering lines into fields in the 200-mile-long Permian Basin area, all the natural gas developed there in the production of oil had to be wented into the air because there were no available markets. The Texas-California pipeline project, therefore, the officials emphasized, brings about the conservation and profitable utilization of a natural resource which would otherwise be wasted.

BIGGEST INCH PIPE LINE DEDICATION CEREMONY
SANTA FE SPRINGS, CALIF. NOVEMBER 13, 1947

L. to R.—A. F. Bridge, President Southern Counties Gas Co.; Lt. Governor Goodwin J. Knight; LeRoy M. Edwards, Vice President Pacific Lighting Corporation; F. S. Wade, President Southern California Gas Company; and Paul Kayser, President El Paso Natural Gas Company.

All-Western Enterprise

The executives of the three sponsoring gas companies emphasized also that the building of the pipeline was strictly a western achievement, planned, financed and executed by western enterprise. The project, they point out, is the result of long range planning on the part of the companies involved to provide adequate supplies of natural gas to meet the continually demanding requirements of the West Coast.

The El Paso Natural Gas Co., which built and will operate the portion of the line from Texas to the California border, was organized in 1927 by a group of Texas oil and gas men to construct and operate pipelines in Western Texas, New Mexico and Arizona. The natural gas pipelines of this firm already supply the gas as far west as Phoenix and Tucson.

1,200,000 Meters

Southern California Gas Co. and Southern Counties Gas Co. have been the principal distributing companies in Southern California for many years, having developed a highly integrated system of natural gas pinelines which tap all the main sources of supplies in California. The two firms together serve approximately 1,200,000 meters and their combined systems represent the largest natural gas enterprise in the world.

Southern California and Southern Counties Gas Co. jointly financed the portion of the line extending from the Colorado River to Santa Fe Springs. This portion, 212.6 miles long, represents an investment in excess of $16,000,000.

30 Year Contract Closed

The El Paso Natural Gas Co. has entered into a contract with the two Los Angeles firms had entered into the above amount of gas over a period of 30 years.

It was announced that completion of the Texas-California pipeline will not benefit gas users in Southern California. Before the valve was turned at Santa Fe Springs, the two Los Angeles firms had entered into an agreement with Pacific Gas & Electric Co., San Francisco, to release from 50 to 100 million cubic feet of gas a day from San Joaquin Valley sources in central California for use in the Northern California areas served by PG&E. This arrangement, the companies involved assert, solves for the time being, at least, a gas supply problem which has become increasingly more acute in the northern part of California during recent years.

(Concluded on page 50)

Maintaining Good Relations During Critical Times

By
Ralph S. Wenner
Ind. Sales Manager
The Ohio Fuel Gas Company
Toledo, Ohio

In this paper, presented at the A. G. A. Convention, Mr. Wenner points out the advisability of telling our customers (particularly industrial customers) the facts of the present situation.

There is a gas shortage, but it is not due to the lack of gas but rather to the shortage of pipe and equipment that is used to get the gas from the field to the customer.

He states that these facts should be presented to all customers and also what the company is doing to improve the situation as quickly as possible.—Ed.

ALMOST without exception, gas utilities find themselves today in the position of being besieged with requests and even demands for their product far beyond their ability to serve. This is not limited to one class of our business, but applies to all classes. It is not caused by a diminishing supply which no longer can be stretched to meet a normal demand. It has come upon us in the face of increasing supplies, and is due to a phenomenal growth in demand for our product for all uses, and which, even on the part of industry, exceeds that of war time peaks.

There are many factors responsible for this increase in demand. In the domestic classification the additional house heating load is easily understood, but even in most industries the level of production has risen well above that of pre-war peaks. Even war time peaks are being equalled, and types of industries that were less active during the war have come back into their own. Many causes, with which we are all more or less familiar, have resulted in shortages in competitive liquid and solid fuels and the cost of these fuels in comparison with gas has risen until the differential between them and gas, in many localities, has disappeared. The war placed an emphasis on the advantages and desirability of gas. The plus attributes we had been selling for so many years were brought into focus as never before and the acceptance of gas as a preferred fuel has, as a result, been accomplished to a degree beyond our fondest pre-war hopes.

These facts need no elaboration and anything more than a brief statement of them in this paper is unnecessary. They do, however, have a definite bearing on this matter of customer relations.

Customer relations is always an important and timely subject and to the Industrial Engineer it is particularly so at this time. For years his activities were pointed toward selling a greater appreciation of gas for the purpose of stimulating demand, building load and increasing revenues. Now, almost overnight, the ultimate in his hopes has been accomplished and the demand for gas fuel exceeds any reasonable expectation of being satisfied for years to come. Not only is it no longer necessary that the Industrial Engineer devote time to selling his product, but it is not expedient that he do so. His function becomes not so much that of selling gas, or the means of accomplishing this, as of tactfully regulating the demands to be made upon us. Of course, that is still a selling job and, if anything, a more difficult one than ever before since it is more than ever concerned with intangibles. But it is a different type of a selling job than that to which we had been accustomed and since it may reasonably be presumed that it is the type of selling with which we will be concerned for some time to come, it is only fitting that we give some serious thought to its analyzation.

New Selling Job

I think it will be pretty generally agreed that the most important function of this new selling job is that of maintaining good customer relations. The matter of load building either is non-existent or to the extent that it may be permitted, pretty well takes care of itself. Good relations with our customers are, however, of paramount importance in making considerably easier the tasks involved either in connection with the denial or curtailment of gas; and when more normal conditions return, our relations with them then are bound to be predicated upon the good or ill will engendered during these times.

The fact that there happens to be a shortage of gas and that as a result we are not able to satisfactorily serve our customers does not, in itself, necessarily impair customer relations. Shortages have become a common experience to everyone, felt not only in the field of luxuries but in that of most of the necessities of life as well. The Public has come to expect this and in a very large measure to accept it. Particularly is this true in industry where the shortage of one commodity after another has plagued management almost without interruption since the beginning of the war. This shortage of gas fuel is just another—even though frequently a more serious — annoyance with which it must contend. But over a period of time it has learned to accept these crises with a greater and greater degree of equanimity, and to view them as due to circumstances forced upon its suppliers in much the same manner as its own troubles have happened. As a result, industrial management is now inclined to be more tolerant of such a situation than it was several years ago, and this is true in spite of the fact that the situation has been getting worse rather than better. They simply want to be assured that there is no laxity of effort on the part of the supplying company toward ameliorating the conditions. Convince the customer that all that he himself could possibly do to meet such a situation is being done, that progress is being made, and that ultimately a satisfactory solution will be reached and his attitude, if not entirely favorable, at least becomes satisfactory. I am not trying to say that he becomes completely satisfied. Obviously, he does not since to him it must remain a matter of grave concern. But by taking him into our confidence and telling our whole story, pointing out the problems in-

volved and the steps that have been taken or are contemplated to meet the situation, and by a frank discussion of what the future holds, stripped of all unwarranted optimism, we can, I am sure, retain his confidence and an entirely satisfactory working relationship with him.

A Good Story to Tell

As an industry we have a good story to tell—one that we need in no way be ashamed of. Work stoppages and large scale lay-offs are dire results indeed, and this very fact has served to over-emphasize or at least to give undue prominence to our shortcomings. But behind this there is a record of achievement on our part which is no less real simply because it is less sensational and consequently less publicized. As individual operating companies, we each have a good story to tell. It will vary in degree and in detail with different companies, but substantially it is of the same order. It is a story which should be told and which needs to be told and which, if properly told, will serve as a very active and effective force in maintaining good relations. Certainly it is the best we have at our command during these critical times.

I am not presuming that this is any new idea or even one upon which no action has already been taken by most of you; but I do believe that none of us have given it the full play it deserves and also that we have all been a little late in starting to make use of it. Consequently it may be of value to review the various phases of this story and point out the most effective ways and means for disseminating it. Any suggestions made may, of course, need special adaptations for suitable and effective use in different communities. This particular presentation which I will outline presents the story as it pertains to a natural gas company operated in the Appalachian Area. It is, however, typical of many others and will have some significance even to Eastern Manufactured Gas Companies.

What Needs to be Told?

What is it that needs to be told? Obviously we must give the answers to the questions foremost in the customer's mind. Here, at least, are the more important of such questions, and to the extent that they can be satisfactorily answered a continuance of good customer relations is assured.

How long will this shortage last? Is it to be a permanent condition or is it only temporary? This, I think, is the question uppermost in their minds.

Here we have the opportunity to show that it is not a gas shortage but in every sense a material shortage and the same material shortage which has restricted every industry since VJ Day in varying degrees and at different times.

Reserves have never been as great as they are today but these reserves for the most part are in the Southwest, removed from many markets and available to these markets only after more transportation facilities are built. It is not a permanent condition but will last only so long as material shortages exist.

They want to know just what we have been doing and are doing to correct these conditions. To what extent could the situation have been foreseen and was there negligence in preparing for it?

The answers to these and other questions which will follow are commonplace with us, and, as a result, we are all too prone to believe that the general public understands them better than they actually do. We may have given satisfactory answers to these questions many times to individuals, probably to our industrial customers, and particularly to the larger ones who suffered most severely, during the war and since, as a result of necessary curtailments. But this is not sufficient. Curtailments as critical and severe as those imposed during the last few years become a public problem. Men are thrown out of work in sufficient numbers for the matter to assume head-line importance both on a local and a national scale. Under such circumstances good relations cannot be maintained simply by telling our story to industrialists; it must, through some channels, reach the public ear, and obviously is best told directly. The industrialist, himself, is sensitive to public opinion and in time comes to accept the common judgement. Even if we have persuaded him in personal conversation, he is very apt to change his mind if the public reaction is unfavorable. It is essential to our interests that the public be properly advised and convinced in our favor.

Inviting an Investigation

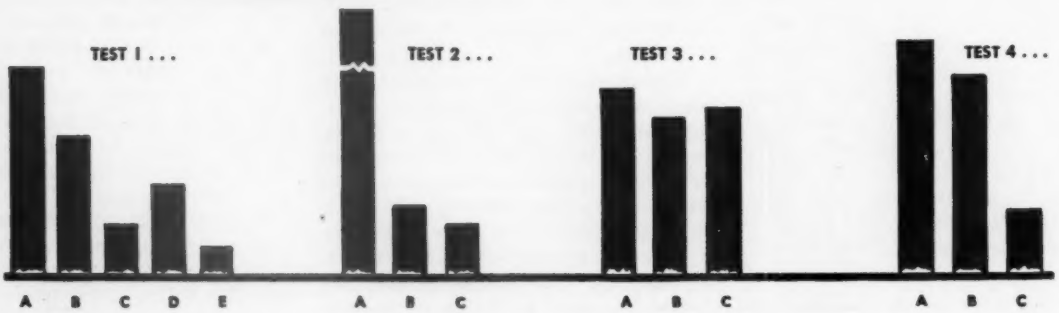
In our company we have given greater dissemination to this story by encouraging and inviting an investigation of these matters by public and semi-public committees. Committees representing public officials, Chamber of Commerce, industrialists, labor and the press. We have made available to such committees all existing information, and have answered as fully as we were able, all questions that seemed to be in their minds. Such meetings we have found to be as illuminating to us as to even the least informed of these committee members. It was rather amazing to find how little some of them knew of the matters which are basic to this problem. In the beginning we found a feeling pervading the minds of many that such an acute shortage could not have happened without ample warning and that the exercise of ordinary prudence and fore-sight on our part should have precluded the present situation. They were surprised, therefore, and favorably impressed, to learn that in the case of our particular company our sales had increased from 65.5 billion cu. ft. in 1940 to an estimated 100 billion cu. ft. for this year—an increase in seven years of over 50%—and that this increase was rather steady throughout that period of time and was occasioned by increases in every division of our business, commercial and industrial as well as residential and that even the residential base load had risen to a surprising degree. They were further surprised to learn that this rate of increase is still holding. They were only partially familiar with the problems of supply and were not a little surprised to learn of the extent to which the Appalachian Area reserves had been depleted and that as a result production in this area had dropped from a peak of 522 billion cu. ft. in 1917 to 138 billion cu. ft. in 1938.

New Sources and Storage

The story we have to tell is really a fascinating one. Starting with the early days when the supply was obtained from fields adjacent to the market; on through the succeeding steps of increasing market and decreasing supply, which necessitated the bringing of gas from greater and greater distances, to maintain existing and ever increasing markets; until now, when the new supply can come only from areas in the Southwest, situated from one to two thousand miles from our market. This Southwest supply became important to us only during the early days of the war. Then, with unexpected suddenness, we were faced with three changing conditions—accelerated increase in demand, unexpected decrease in available reserves, and the unavailability of steel and other materials for developing sufficient additional transportation facilities from

HERE'S WHY THESE ADVERTISEMENTS BY YOUR BEST

In Gas Company showroom tests, prospects *told us* which kind of refrigerator ads would influence them most



To be ready for the coming buyers' market—and to meet the challenge from competition's increased advertising activity—Servel wanted to make certain that Gas Refrigerator ads would be *seen and read in '48*. By conducting consumer interviews in various Gas Company showrooms, Servel determined which kind of advertisement did the best job of changing refrigerator prospects into *gas* refrigerator buyers.

Headlines, copy appeals, layout styles and techniques were tested. The first test determined the style of refrigerator ad most likely to receive highest attention and readership. Test number two compared newly prepared ads with the most successful ad of 1946-47. Test three found out how much variation could be introduced to dramatize Servel's points of difference. And the final test disclosed the most effective wording of the exclusive Servel selling story for he[illegible]ine use. The information gained has been used to the utmost advantage in planning Servel's 1948 advertising—*both national and local*.

CONCLUSIONS:

- **show refrigerator as large as possible in ad**
- **sell on Servel's points of difference**
- **use the headline "Stays Silent, Lasts Longer"**

. . . AND HERE'S THE RESULT

These are the ads your prospects voted for. Each full-page ad shows a giant picture of the 1948 Gas Refrigerator in full color . . . under the headline banner of "Stays Silent, Lasts Longer." The copy story is told fast and simply . . . with short copy blocks to assure *complete* reading.

Servel GAS REFRIGERATOR

EVANSVILLE 20, INDIANA

WILL BE *SEEN* AND *READ* CUSTOMERS

new supply fields. New supplies from these fields have been coming to us for some years now and the quantities have been increased as fast as approval from regulating bodies has been obtained, and the necessary materials have been available. Present plans are for a continuance of this program for some years to come. The immensity of this program is made evident from the fact that four years ago Columbia System had no contracts for Southwest gas and now have contracted for a total delivery of 550 million cu. ft. per day by the winter of 1948-49. In order to utilize to the fullest extent the peak capacity of these transmission lines, we have developed underground storage fields for storage of summer deliveries against peak winter demands. These fields are the largest in the world and at the present time in Ohio alone we have in storage 28 billion cu. ft. Each successive Fall this figure is to be increased until ultimately a figure of about 50 billion cu. ft. will be reached. To further supplement our available supplies for peak days we have installed two propane plants in Ohio in the vacinity of our heavier markets. These plants are rated to deliver 62 million cu. ft. of natural gas equivalent per day. Storage for 2½ million gallons of propane is provided, but the number of days these plants can actually be operated depends on the ability of refineries and railroads to meet the transportation problems incidental to this problem. Here again it is a material shortage. The requirements of the propane plants to be operated by Columbia System this winter will tie up half of all the available railroad cars in the United States suitable for such purposes for one trip.

This story, as I have said, needs to be told through facilities which will afford the widest possible publicity. It must be repeated over and over again. Telling it to a selected few, even though they comprised the group most vitally affected, we found to be insufficient. Telling it to committee groups has been found to be very much more effective. The Toledo Chamber of Commerce, through its special committee appointed last February to investigate the interruption of gas service to industry, presented their analysis of the causes and extent of these shortages and their plans for the future in a concise seven page report. This report has been widely distributed and favorably received. Since the general findings are applicable throughout our entire territory, we have had the report reproduced for distribution throughout all of the territory we serve. More than any other one thing, it has served to accomplish a better understanding on the part of the public of the facts and circumstances surrounding this problem. It has had its part in effecting a better relationship with the press, and as a result of their being better informed, there is not only a more favorable but also a more intelligent reporting of the news that bears on this matter.

We are attempting to follow up the good work thus started by meeting with Chambers of Commerce and industrial committees from time to time to bring them up to date on the progress we are making with our plans, and to invite their questions or suggestions. In these meetings we are attempting to give as realistic a report as possible, and continue to stress that for this coming winter at least, curtailments as severe as last year may be anticipated.

What Our Old Customers Think

Another matter upon which information is desired is why, with increasing supplies, is it necessary for a few customers, and usually old customers at that, to absorb the brunt of

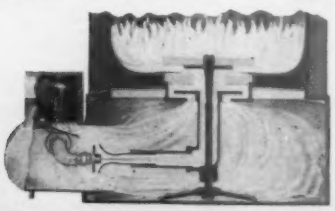
Take 2 Minutes to Read About the GORDON Spreader-Flame

And You'll Want No Other Kind of Gas Burner

● THE SPREADER FLAME — In any gas supply during burning there must be a constant supply of "secondary air" to support combustion. In the Gordon burner, by an ingenious system of baffling (see sketch), this air is brought into work in a manner which technical research and actual field experience have proven to be the most efficient way to do the job. There is just enough secondary air directed to the proper place to support combustion. The flame "spreads" in a mushroom shape, instantly scrubbing the entire boiler or furnace wall with hot gases. Contrast this with the slow, inefficient, candle-like flame produced in most ordinary burners.

THE IRIS ORIFICE—Because of its original and unique design, it can be adapted to any kind of gas and just the right amount of gas in a matter of seconds, with no other change in the equipment.

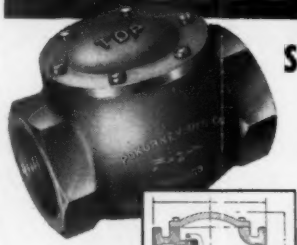
THE GORDON BURNER — revolutionized basic burner design in the industry. But remember there are no substitutes to equal the original Gordon burner with its patented features.



ASK FOR DESCRIPTIVE LITERATURE

ROBERTS-GORDON APPLIANCE CORP.
137 Arthur Street • Buffalo 7, N. Y.

POKORNEY



SWING CHECK VALVES
SERIES 3000

Specify Pokorney check valves for more efficient service on manufactured, natural or liquefied petroleum gas lines. Series 3000 valves are fitted with a synthetic rubber seat permanently molded to aluminum check disc. Provides a perfect seal against back flow...unaffected by liquefied petroleum gases or condensate. Special seat design and precision machining prevent sticking. Free action disc opens fully providing full flow thru valve with minimum resistance and negligible pressure drop. Size ½" to 6" available for immediate shipment from stock in bronze, aluminum and grey iron. Larger sizes on special order. Write for prices and bulletin today.

Pokorney valves are machined to strict tolerances. Every valve individually tested. Fully guaranteed.

CHECK these Pokorney features:

- ☐ Soft seat, synthetic rubber permanently molded to disc.
- ☐ Tight seal against back flow.
- ☐ Non-sticking on minimum flow.
- ☐ Valve seat not affected by condensate or liquefied petroleum gases.
- ☐ Full flow, low maintenance, long service.

SERVING THE GAS INDUSTRY FOR OVER 40 YEARS
POKORNEY MANUFACTURING COMPANY
3117 Clybourn Avenue, Chicago 18, Illinois

curtailment? These customers who have been with us for years and have made heavy capital investments adapting their processes to our fuel, feel, with no little justification, a proprietory interest in our available supplies. They will concede prior rights to domestic and some other customers who have been with us for an equal period of time; but do not understand the justification of their being set aside to make room for new customers of any classification. These new customers, they feel, are the ones who should wait their turn and be taken on only to the extent that additional supplies are available and not at the expense of the business of old established customers.

More than a few of us in the Gas Industry are inclined to go a long way in agreeing with them. We know, however, that such discretion is not left to us. In most, if not all, States there is a presumption under the law that the function of Public Utilities is to serve the general public — the domestic customer — first, and this is interpreted to mean that only what is left after their needs are served is available to industry. If industry ever knew about this before, the fact that for so many years it was unnecessary to invoke these old rules of law caused them to forget it and for the most part a new generation of management has grown up totally unfamiliar, until the last few years, with these facts. Pointing out these facts in the course of telling our story, serves fairly satisfactorily as an alibi but that is perhaps its least important results. More important than that, it brings these facts out into the open, for public discussion, and raises the hope that such problems may be reviewed in the light of more modern ideas on this subject; with the possibility that ultimately they may be resolved more in the public interest than these rulings of twenty to thirty years ago permit.

We can all agree that the public interest is paramount and that Public Utility services and our natural resources are, or should be, dedicated to such ends; but there does not necessarily follow from this presumption that this end is accomplished by means that result in acute work stoppages, and loss of critical industrial production, to say nothing of serious financial loss to both workers and industry. One thing the public does not yet understand until we tell them about it, or until it becomes apparent through such conditions, is the extent to which technological changes have been made in the last two decades. Gas is no longer a fuel which has been simply substituted for coal or oil but new equipment and new processes have been designed and built to make the most of every potential advantage possessed by gas. In such cases you just can't return to original methods at will; and if you do, you have turned back industrial progress ten to twenty years. When the public understands that industry doesn't simply use gas but is geared to gas and that the public suffers to the degree that the economy of a community may be dependent on this industry, then we may expect a change in the fundamental thinking of that community with respect to such things. It will become apparent that a community may gain more through giving up some additional gas house heating than the product of its industry.

Regulatory bodies are sensitive to the trend of public thinking and as such facts as these are better known, we may be certain that such questions ultimately will be resolved exactly as the public wants them to be resolved. By telling this part of the story we make a two-fold gain. We assist in quickening the resolution of these problems and we build a more adequate appreciation of the important part we have played in the development of the community we serve. Our customer relations are strengthened as a result.

By these group discussions with industry we were able to bring about a modification in our curtailment procedure more to their liking and consequently to the betterment of our relations with them. We had followed the procedure of W.P.B. and placed on the curtailment list only those customers using 50 MCF per day or more. Now, at their suggestion, we include all customers using over 25 MCF per day, and agree to permit the use of this minimum amount, by each customer, as long as circumstances will possibly permit it.

In order to encourage the installation of as much stand-by equipment as possible, and as a gesture of appreciation for such cooperation, we reimburse customers for stand-by fuel used at our request. This will be the second year that such a policy will be in effect. Under its terms we agree to reimburse a customer using stand-by, an amount of money equivalent to what the gas thus relinquished would have cost the customer. Substantially this means that such fuel costs the customer nothing and he is partially repaid for his investment. We feel it has definitely contributed to better relations.

Customers Are Sensitive

Our customers are quite sensitive, and understandingly so, about advertising devoted to promoting new load. They can be made to understand that promoting the sale of new ranges, refrigerators, water heaters and the like, add nothing, in an appreciable way, to peak demands and in most cases act to lower consumptions. They will understand, also, that upgrading of existing heating equipment or equipment in their own plants likewise serves such purpose. But advertising that is aimed at promoting new loads is objectionable. Our advertising—at least on the local level—should, therefore, in the interest of better relations, omit all such objectionable copy. Rather we should use as much of it as possible in telling and retelling our story. Currently we have been using, and we think quite effectively, a story in connection with our propane plants; stressing the fact that we, too, are installing stand-by equipment. What promotional advertising is done during these times should be limited to the national level and even here some space should be devoted to telling that part of the story which is common to the industry.

Customer relations, public relations — in our case there can be scarcely any distinction — is, of course, a very broad subject. It is perfectly evident that the full scope which the subject suggests cannot be covered in any paper of such limited length as this one. The few ideas which have been pointed out seem to be particularly applicable and appropriate under the existing circumstances. These circumstances, which in all likelihood will prevail for at least another year or two, have been extremely trying ones; and yet, for all of that, they seem to hold in them elements which, if properly used, can be made to result in a better understanding with our customers than we have ever had before. By sensing this and acting upon it, these critical times can be made to serve the purpose of not only maintaining good relations but actually bettering them.

Insulation. Fiberglas in wool blanket and board form, and its applications, are described in bulletin 945 issued by Owens-Corning Fiberglas Corporation, Toledo 1, Ohio. Included are gas appliance insulation, and insulation for high and low temperature applications. Also for air filters and underground pipe line wrapping. Copy of this well illustrated 8 page bulletin on request.

"The Future of Atomic Energy"

By
Dr. Lee A. DuBridge
President,
California Institute of Technology

There has been a great deal written on the subject of atomic energy. Dr. Lee A. DuBridge, in his paper presented at the Annual meeting of the Pacific Coast Gas Association, September 24, 1947, discusses the peacetime uses of atomic energy. He presents a complete analysis of the subject.—Ed.

ON A July day in 1945 the newspapers of Albuquerque and other towns in New Mexico reported that local residents had seen an early morning flash of light and had felt earth tremors due to a mysterious explosion. It was assumed that an Army munitions dump near Almagardo had blown up. But the papers carried no further news about it. Wartime security control was excellent.

But a few hundred observers scattered through the hillsides around a New Mexico valley had witnessed the birth of a new era. And three weeks later when two Japanese cities felt in succession the devastating effects of similar blasts the world knew also that a new era had come.

As these two blasts brought to an abrupt end the most devastating war in history, men all over the world knew that another war must never occur if civilization were to survive. Fifty years of scientific exploration in the field of atomic physics had culminated in a stupendous achievement which placed the world at the crossroads in the field of international relations.

Now I do not intend to speak today about the military application of atomic energy—about the atomic bomb itself or the problems of international control which it has raised. I am going to speak of the possible peacetime uses of atomic energy. But I want to make it clear at the outset that all the peacetime uses we can now foresee—valuable as they may be—are as nothing compared to the military significance. If it were necessary tomorrow for the world to forego forever all peacetime uses of nuclear energy in order to insure that it would never again be used in war, the world would be getting a tremendous bargain. If the existence of the atomic bomb brings about some day a mechanism for avoiding future wars, this will be a greater achievement than all the possible peacetime values put together.

But while I would be willing to dispense with peacetime benefits of this great scientific achievement, if it were necessary to do so for the sake of international peace, I do not believe that this will be necessary. International control of atomic weapons can be achieved without sacrificing all of its peacetime benefits. Some benefits may have to be foregone or deferred. But we have reasons to hope that others may be more and more fully enjoyed as time goes on.

Possible Benefits of Atomic Energy

It is worthwhile, therefore, to examine just what these peacetime benefits may be and in what ways they may benefit our lives.

But this is a large order for a brief discussion. For the peacetime uses of this great discovery are many and varied—and of course are to a large extent unpredictable.

For example, one of the great fields of usefulness of atomic energy may be called its indirect uses—the production of radiations and radioactive materials for scientific and medical purposes. No one can possibly predict what great new discoveries these new tools for research will make possible. Some great new additions to our knowledge are already in sight—others will appear in wholly unexpected areas as the years go by. These radioactive by-products of atomic piles are now available for research purposes to scientists in this country and abroad. A whole new realm of scientific exploration is now opening up.

But I am not going to talk about these indirect uses of atomic energy. I shall confine myself to the direct, non-military use of atomic energy itself. Here is a great new source of power which man can now control for his own use. How big a source is it? How soon can it come into use? How cheap will it be? Where and how can it be effectively used? How soon, in short, will it put the coal and oil and gas companies out of business?

My answers to these questions—and my predictions—must of course be based on our present knowledge. There is no use speculating about what radically new discoveries in science may bring. Let's answer these questions on the basis of what is now known—assuming only the normal processes of engineering development and improvement in techiniques.

Facts

First, let us get our feet on the ground as to a few facts.

As you all know, certain types of uranium atoms can be split in two, and in the process yield a relatively large amount of energy. This splitting of U-235 can be made to occur spontaneously and at a controlled rate in a so-called chain-reacting pile, or reactor. The energy is then recoverable in the form of heat.

Now when one pound of U-235 is consumed in this way the heat produced is equal to that produced by the burning of about 1500 tons of coal. Let me say that again—1 lb. of pure U-235 yields as much heat when fully consumed as 1500 tons or 3,000,000 lbs. of coal.

Now the entire annual coal consumption of the United States is about 600 million tons. The same amount of heat could be produced by only 200 tons of U-235. Or stated in another way, an electrical power plant which consumes, say, 150,000 *tons* of coal per year would get the same heat from just 100 pounds of U-235 per year.

Or in still other terms, if this heat can be converted, say, by a steam engine into electrical power at 10 percent overall efficiency, 1 gram of U-235 will produce 100 kilowatts of power for 1 day; or one pound will deliver 125 kilowatts for over a year. A 100,000 kilowatt generator then would use less than one-half ton of U-235 fuel per year. The same plant would use 800,000 tons of coal per year. All the electrical power used in the whole country could be produced by consuming about 100 tons of U-235 per year.

This will illustrate, I think, the enormous concentration of energy in atomic nuclei which can be re-

leased by the fission process in a chain reaction. A new source of energy of tremendous potentialities indeed!

I said a *new* source of energy. So it is! For as far as we know the energy released by the fission of heavy nuclei has never before been tapped on a significant scale. However, nuclear energy itself is not a new thing in the universe. Nuclear energy released by another process is not only the oldest but is the primary source of energy of the universe. When very light elements, such as hydrogen, unite to form heavier ones, such as helium, great quantities of energy also are released. This process is now known to be the source of energy in the sun and all the stars. This energy in the sun, converted to heat, is the sole source of energy on the earth. So the earth, as we know it, exists solely because of nuclear energy—coming to us via sunlight. Unfortunately—or fortunately maybe—there is in sight no method for causing this type of nuclear process to take place on earth. We are limited for the present to the fission process in heavy atoms.

Now a new source of energy on earth is a tremendously significant Thing in itself. We do not yet fully know just what it will mean to mankind.

Not Approaching End of Known Energy Stores

Nevertheless it is well to remind ourselves that man is not yet approaching the end of his previously known energy stores. It is estimated, for example, that the known coal deposits will last at the present rate of consumption for another 4000 years. Gas and oil stores may not last that long—but new fields are being found every year.

And then there is one source of energy we have not yet begun to tap except in a small way—namely sunlight itself. We do use waterfalls and windmills, of course, and we grow trees and other plants usable for fuel. Even coal is really only trapped sunlight. But the total amount of sun's energy falling on each square mile of this country in a year equals the energy of about 500,000 tons of coal. If we could use all the sunlight falling on a single piece of land 30 miles square it would equal the entire coal consumption of the whole country. Here truly is a staggering and inexhaustible source of energy which we will certainly some day learn to use more effectively than we now do. At the present time, however, we do not know how to use it economically.

A Few Practical Questions

But to return to nuclear energy, let us ask a few practical questions:

1. How much uranium is there in sight, and how large a source of energy is this, in fact?
2. What are the problems of using the energy economically so that it can compete, say, with coal or oil?
3. How soon will nuclear power plants become available?

First, as to the supply of uranium the picture is not bright. Before the war uranium was mined for various industrial uses, but especially because of its radium content. The annual production of raw uranium was only about 1000 tons a year—with known reserves totaling only 30,000 tons. There is no reason to believe the figure is substantially different today as far as rich deposits are concerned.

But natural uranium contains only .7% of the precious U-235, hence, 1000 tons of natural uranium contains only 7 tons of U-235. Seven tons a year is equal to 21 million tons of coal—but that is only 1/30 of our annual coal consumption. Thus if all the U-235 being mined in the world were used in this country for industrial purposes it would add only 3% to the effective annual coal supply. And that assumes no other country gets any—when as a matter of fact very little uranium is actually mined in the United States—it comes mostly from Canada and the Belgian Congo. If these had not been friendly countries there would have been no atomic bomb!

And we also assumed that all the 7 tons of U-235 could be used for power—and none diverted to military weapons. This is hardly a reasonable assumption in the world in which we live.

So until great new deposits of uranium are discovered, or until economical methods for treating very low grade ores are developed, we had better not abandon our coal mines or oil fields!

Actually the picture is not quite so dark. For we know that if U-235 is consumed in a pile containing raw uranium, some of the abundant isotope—U-238—is converted by neutron bombardment into plutonium—and this is an even better fissionable material than U-235.

While we are getting power from U-235 we are also making Plutonium and we can then use the Plutonium and get power—and at the same time make more Plutonium. In principle, then we could convert all of our natural Uranium into Plutonium. This at once multiplies our stock of fissionable material by 140 for U-238 is 140 times as abundant as U-235. And if we could use our whole 1000 tons a year of Uranium—instead of only 7 tons of U-235—we would have an energy equivalent of 3 billion tons of coal a year, which is 50 percent more than the production of the entire world before the war. And though only 30 years' supply is now in sight, new sources will surely be found and low grade deposits will be worked.

But here again we must be careful! Using all our Uranium rather than only U-235 is a possibility—but it has not yet been done!

Many Years of Work Needed

Certainly many years of work will be needed before we can be accomplishing this conversion into Plutonium on a large scale—and many years more will be required to build up the stocks of Plutonium. I am inclined to believe that 30 to 50 years will elapse before Uranium can possibly become a *major* source of power, comparable, say, with present production of electrical energy. And even this assumes that military requirements for Plutonium will not take the whole output for the next few years, as they are likely to do. Furthermore, by the time Uranium is likely to be a large scale source of power our power needs will have multiplied so greatly that we will still need full scale production of coal, oil and other existing fuels. There is no prospect whatever that I can see that demands for coal, oil or gas are likely to ever be reduced by the availability of nuclear power.

Remember—this is based on present knowledge. While totally new discoveries may change the picture in coming years, no such discovery is now even in sight. Furthermore this is my own personal view and I may be wrong.

Does this mean that nuclear fuel is of no importance to us at all? Certainly not!

There are scores of important applications where a few thousand or a few million kilowatts of power from Uranium will be of enormous importance. Think, for example, of ship propulsion.

Once a nuclear-powered engine has been installed on a great ship only a few pounds of additional fuel will be required to keep it running for a year. This would seem to be one of the most promising applications—especially for naval vessels—and still more especially for submarines. Think of a fleet that could stay at sea almost indefinitely without refueling!

Let me emphasize that even this application is not yet here. A nuclear pile operating at a temperature high

enough to operate steam or gas turbines has not yet been built or even designed. Probably, however, a few years would be sufficient to solve the engineering problems — so if this project could command the manpower, money and the Uranium one might expect a few ships to be powered in this way in the next 10 years.

Another application has been suggested by my colleague, Dr. Pauling. A nuclear heat engine generating at 50,000 or 100,000 kilowatts could distill a million gallons a day of sea water for Southern California. For industrial and agricultural purposes this would be much better water than we now get from the Colorado River.

Think also of other places in the mountains or desert—near sources of raw materials—where industrial processing plants might well be located, except for the prohibitive costs of bringing in coal.

What About Costs?

Here there are two unfortunate factors. First, at present, nuclear power plants are rather expensive investments. According to a report of the U. N. Atomic Energy Commission, a plant to produce 100,000 kilowatts of power might easily cost 25 million dollars. Thus interest and depreciation costs are going to be very high.

Second, however, Uranium 235 or Plutonium are exceedingly expensive fuels. Raw Uranium cost before the war about $2.00 a pound. But one must separate out, in part at least, the U-235, and this is extremely expensive—certainly running to thousands of dollars per pound. Since 1 lb. of U-235 is equivalent in heat value to 1500 tons of coal, U-235 could still cost $9,000 a pound and compete with coal at $6.00 a ton. Present costs of U-235 are probably even higher than this!

Including both plant investment and fuel costs, therefore, Uranium power now will cost at least twice as much as power from coal. So the first applications must be those where low weight of fuel is more important than high costs. Engineering development can certainly bring these costs down. But U-power is not likely to ever be very cheap though it may some day compete with coal and oil.

One must not, however, minimize the magnitude of the engineering problems which remain to be solved before even *one* power-producing pile is in operation. It is true that some of these reactors produce a very large amount of heat. But they were purposely designed to operate at very low temperatures and hence this heat —while it might supply running hot water to a sizable city—cannot be efficiently converted into electric power. The main engineering problem ahead is the design of a reactor to operate at a high temperature so that high pressure steam can be generated. This probably can someday be done but the design and engineering problems are staggering. For example, most materials that would be thought of to be used to extract the heat would absorb so many neutrons that they would stop the reactor. Structural problems, thermal problems, fantastically difficult chemical problems, problems of shielding and safety appear in a staggering array. It will be many many years before they can be solved.

Let me summarize briefly:

1. U-235, pound for pound, yields 3 million times as much heat energy as coal.
2. The prewar world production of U-235 was only 7 tons a year—equal to only 21,000,000 tons of coal—or 3% of the U. S. consumption, enough to generate possibly 10% of the U. S. electrical power.
3. Separating U-235 from raw Uranium is a very expensive process so at present U-235 costs more than 3 million times as much as coal. In addition Uranium power plants are far more expensive than coal plants.
4. U-235 reactors can be used to convert the more abundant U-238 to Plutonium so eventually all of our raw Uranium (and maybe Thorium too) can be converted to nuclear fuel. If this can be done on a practical scale a huge source of energy will eventually become available.
5. It is still not clear that nuclear power even when available will be very cheap.
6. Developing methods to convert U-238 to Plutonium is a long and difficult engineering process—requiring possibly 10 years — and once the method is developed an additional 30 or more years may be required to actually do the conversion. *Hence very large scale use of nuclear power is a long way off*—AND IT will be deferred still more by the necessary diversion of U-235 and Plutonium to military purposes.
7. Small scale uses of nuclear fuel can be expected to develop in the next ten to fifteen years for special purposes where cost is not a factor —providing adequate manpower is available to solve serious engineering problems.

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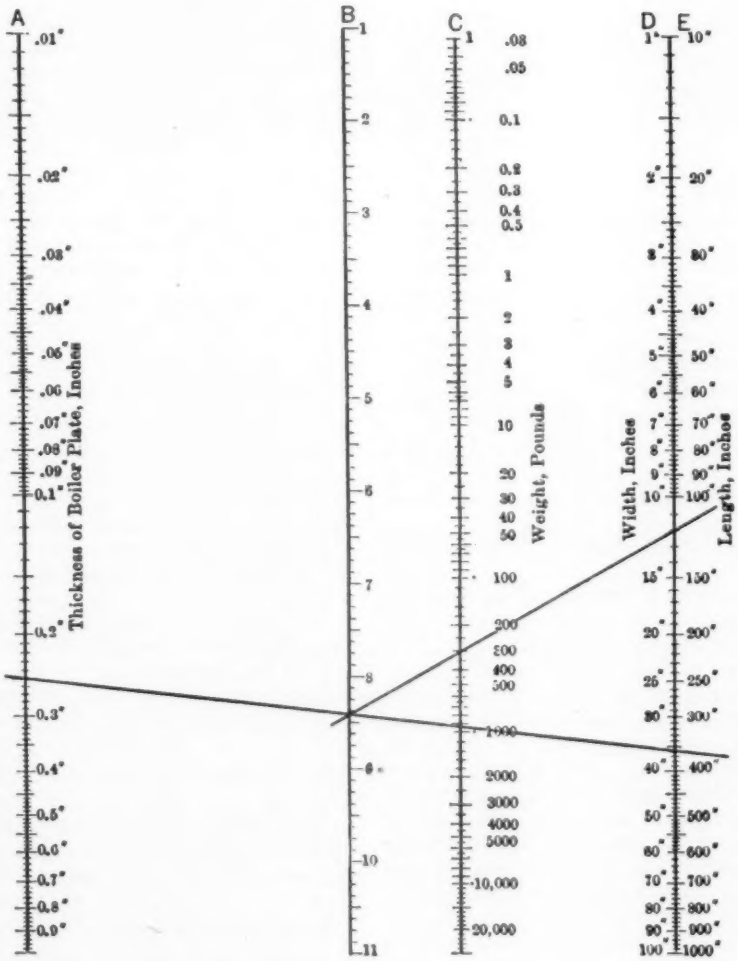
This Handy Chart Gives the Weight of Any Steel Plate

By

W. F. Schaphorst, M.E.

Newark, N. J.



In two simple and quick operations you can determine the weight of any steel plate by using this chart. It is merely necessary to know the three dimensions of the plate—the length, width, and thickness.

For example, what is the weight of a steel plate ¼" thick, 30 ft. long, and 12 inches wide?

Run a straight line through the thickness, column A, and the length, column E, and locate the intersection with column B. Then from that point of intersection run over to the width, column D, and the intersection with column C gives the answer.

Thus in this instance we connect the 0.25%, column A, with the 360 in column E because there are 360 inches in 30 ft. Then from the point of intersection in column B as shown by the drawn lines we run over to the 12 in column E and the intersection with column C tells us that the weight is a trifle over 300 pounds.

As will be noted the range of the chart is great enough to take care of nearly any steel plate. Thicknesses vary from .01" to 1". Lengths vary from 10" to 1000". And widths vary from 1" to 100". As a result the weights included run all the way from .08 lb. to 25,000 pounds.

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Maintenance of Adequate Air Pressure

Low Air Pressure—Its Causes, Effects and Remedies

OF THE SEVERAL sources of power, none is so conveniently stored and conveyed to the point of use as compressed air. It requires no insulation against heat loss in transmission, involves neither fire nor shock hazard and in application is flexible, compact and powerful. No other source of power has such a wide variety of uses.

The compression of gas for high pressure transmission and for other purposes requires many large compressors. Small air compressors are used to start gas engines. Compressors again are required for compressing carbonic acid, acetylene, oxygen and other gases. Compressed air is used for testing pipe lines and pneumatic tools are used for caulking pipe lines and tanks and for riveting tanks.

The power of one compressor frequently is applied to a number of entirely different types of operations, but that does not fully explain the versatility of compressed air. Standard equipment is available today for virtually every requirement. On a one-man job or in an operation where several thousands of workers are using air-operated tools and where the air power supply must be constant or the need intermittent, and where the pressure required is one pound or 5,000 pounds per square foot or for high or low vacuum, and where the source of air power may be stationary or must be portable to reach the work, there may be found air compressors specifically designed and built for the purpose.

The fact that compressors usually are found in an out-of-the-way corner, while the applications for the power it produces are numerous and readily visible over wide areas, should not obscure the highly important part the compressor plays in obtaining satisfactory and economical performance from air-operated tools and devices.

Low Air Pressure

Low air pressure is an abuse of the compressed air system—is a costly and wasteful practice which should never be tolerated. Ignorance of the effects of low air pressure contributes more than any other single factor to a lack of appreciation of the effectiveness of compressed air power.

The information contained in this article has been condensed from the "Compressed Air Handbook", under preparation for two years and just recently published by the Compressed Air and Gas Institute, 90 West St., New York, N. Y. The Handbook is 6 x 9 inches and contains 400 pages and 247 illustrations. It has 5 chapters covering: 1—Typical Applications of Compressed Air and Gas; 2—Representative Types of Compressor Installations; 3—Portable Air-Operated Tools and Rock Drills; 4—Engineering the Compressor Installation for Maximum Efficiency; 5—Compressed Air Engineering Data and Test Procedure.—Ed.

By "low air pressure" is meant inadequate pressure at the tool or the device which is air-operated. It is at this point that the air is used as power. Only the pressure and volume of air available at the point of use can be effective in doing work. Most pneumatic tools, for example, are designed to operate at 90 pounds gauge maximum at the tool. This means pressure at the point where the air enters the tool while the tool is operating. If the pressure is below the range of 85 to 90 pounds gauge, then it should be considered too low since it reduces the ability of the tool to do the maximum work for which it was designed.

The Causes of Low Air Pressure

The causes of low air pressure are easily classified:

1. Insufficient compressor capacity.
2. Inadequate piping.
3. Leakage.

When it is discovered that pressure is too low, the first inclination is to install more compressor capacity. This is not necessarily the correct answer. It should first be determined whether the compressors are at full load when the air pressure is low. If they are, then more compressor capacity may be required, but, even then, consideration must first be given to two other common causes of low air pressure.

The second cause is "inadequate piping." A measure of the adequacy of piping is the pressure loss between the air receiver, where the compressor endeavors to maintain a constant pressure, and the point of use. This should not exceed 10 per cent in a well designed system. The absolute maximum drop for the worst point in the system should not exceed 15 per cent. If the pressure drop is greater than 10 per cent average, 15 per cent maximum, throughout the entire distribution system (including hose), then attention should be given to correction of this fault before considering increased compressor capacity.

A third cause of low air pressure is leakage or loss of air without doing work. It has been pointed out that permitting excessive leakage is the same as exhausting the output of a compressor directly to atmosphere.

Obviously, if leakage is eliminated, the compressed air formerly wasted will be available for useful work. The expense of making lines tight will undoubtedly be less than the installed cost of a new compressor, while the daily power saving may be considerable.

The gas industry considers a loss of more than one cubic foot per minute per *mile* of 3-inch line as excessive.

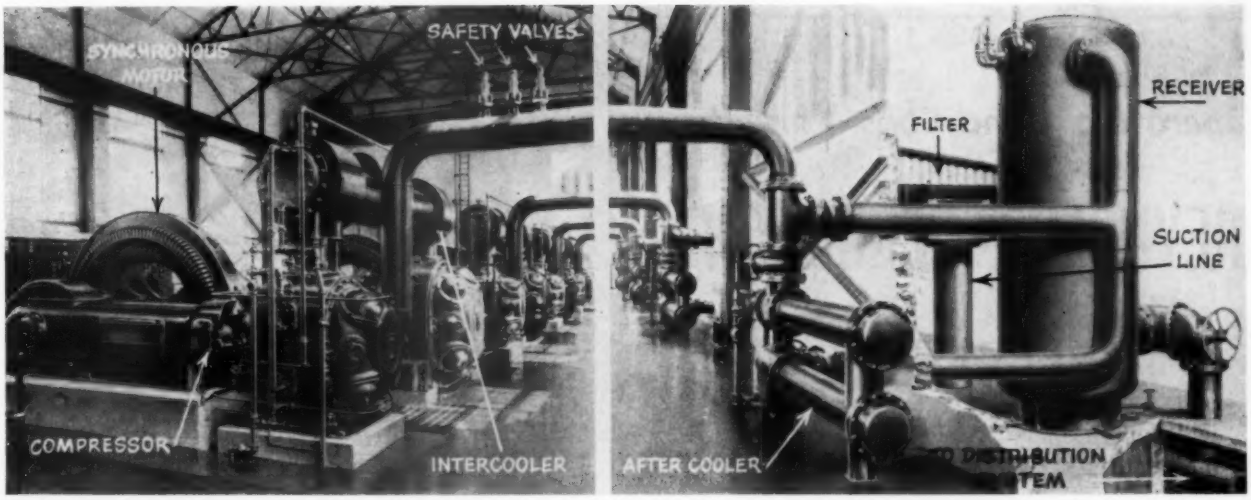
Elimination of leakage is certainly a sensible step toward maintaining air pressure and conserving pressure.

The Effects of Low Air Pressure

There are very few uses of compressed air not vitally influenced by low air pressure. All portable pneumatic tools, rock drills, concrete breakers, hoists, scrapers, loaders, all pneumatic transfer and conveyor systems, paint sprays, oil burners, sandblasts, air lift pumps, etc., operate less effectively when the proper air pressure is not maintained.

The positive result of increasing air pressure to the proper value is:

1. Increased production
2. Reduced cost per unit produced.



Composite illustration showing a large complete compressed air plant including compressor, synchronous motor, intercooler, safety valves, aftercooler, filter, receiver, suction line and connection to distribution system.

The economic advantages of increased air pressure (or conversely, the losses due to low pressure), can be illustrated by considering portable pneumatic tools, such as grinders, drills, chippers, riveters, wrenches, sand rammers, etc. For example, an average increase of 37 per cent in production can be obtained for about 30 per cent increase in air consumption in increasing the air pressure at the tools from 70 pounds to 90 pounds.

The Remedies for Low Air Pressure

The remedies for low air pressure are just as definite as the causes and effects.

Faulty air power conditions are usually due to poor planning or to increased air uses without corresponding system expansion. Plant-wide analysis should determine the full extent of low air pressure and the present air flow requirements. Future growth must also be considered.

Methods of increasing pipe line capacity to decrease pressure loss and improve conditions at the point of use vary with different installations. One may call for a line paralleling the original, with frequent interconnections; another may require installation of a loop system with some outlets taken off the new line to relieve the old; still another may need a complete new system.

Branch lines and manifolds for attachment of tools, etc., should be planned "oversize."

Not the least of the problems of correct system layout is the selection of proper hose for final transmission of compressed air to the tool. Losses of 15 per cent to 25 per cent in air pressure are frequent in hose alone. *Don't* use a hose longer than is necessary to make the tool available to the work and to give proper freedom of movement to the operator.

Every cubic foot of leakage eliminated is pure gain. Such losses in many systems will reach 10 per cent to 20 per cent of the total air compressed. An air leakage test should be run on the complete plant and every section of hose should be inspected. Although leaks are usually small, they may be numerous, having a high total effect. A single 1/16-inch hole will waste 182,000 cubic feet per month, costing $9.10.

The most likely locations of small leaks is around valve stems, in hose connections, unions, drains, home-made blow guns, and lines leading to inoperative tools.

Elimination of leakage involves making the system tight, then *keeping it tight*. Regular inspection is mandatory.

Only after it has been determined that the distribution system is inadequate and that leakage has been eliminated, should increase in compressor capacity be considered.

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Discovery and Control of Leakage

By
H. D. Portwood
Lone Star Gas Co.

EFFECTIVE discovery and control of leakage cannot be economically accomplished by occasional leak inspections alone — our methods must be far more sustained and comprehensive.

To begin with, we must develop a thoroughly alert, leak-conscious personnel. All employes engaged in outside work—meter readers, meter setters, collectors, service and complaint men, chart changers, pressure men, meter inspectors, main and service line installation men, and others—should, whenever possible, be required to work with experienced leakage men long enough to learn at least some of the more important fundamentals of effective leakage inspection and control. Especially should they be taught how to find leaks by means of those certain signs by which almost all leaks betray their existence, such as, sound, distinctive odor, devitalized and discolored vegetation, dry and discolored spots of soil, bare spots in healthy turf, bubbles through standing water, and other similar manifestations. Professional foresters have been very successful in finding gas leaks through these indications, particularly those having to do with vegetation, and there is no sound reason why our employes cannot be trained to do likewise; perhaps not so expertly as the forester, but very effectively nevertheless. Each outside employe should be reminded that leak detection is a part of his regular every day duties, and he therefore must be constantly on the lookout for leaks and leak indications and promptly report all, real or suspected leaks. Orders to outside employes should be frequently supplemented with "look for leaks, report leaks!" The importance of developing a thoroughly alert, leak-conscious organization cannot be over done.

Time Important

The element of time is naturally of great importance where leakage is concerned as the volume of gas passed by a leak varies with time. No leak, therefore, should be permitted to blow for any longer than absolutely necessary as every minute wasted is just that much more gas lost.

A record should be kept of lowest hourly deliveries made each night by our city gate meters as it will promptly warn us of sudden increases in leakage and save time that otherwise would be lost while waiting for regular monthly statements of unaccounted-for gas. Such records can be easily and accurately obtained in cases of orifice meter city gate stations as hourly deliveries registered on charts can be quickly calculated with the aid of an orifice meter slide rule or appropriate differential and pressure extension tables. In cases of positive meter city gate stations, however, hourly deliveries, particularly those at time of lowest demand, cannot, as a rule, be closely calculated from meter charts as the hourly delivery must necessarily be an hourly average of the amount of gas passed by the meter during one wave of cycle arm on its P. V. & T. gauge. Positive type city gate station meters should, therefore, be timed whenever a check of charts discloses unexplained increases in deliveries over those for the same period for preceding nights. These records of nightly deliveries, in most cases, will also eventually indicate what is normal consumption per consumer for that hour of the night and that particular time of the year and thereby enable us to prove leakage figures fairly closely and check on improvements effected by leak repairs.

Gage Pressure

We must also, if we expect to accomplish effective and economical leakage control, take full advantage of every helpful operating practice. Experiments have indicated that for all practical purposes leakage in a system varies almost proportionately with gage (not absolute) pressure; therefore, we should always operate at lowest pressures possible for adequate service. Regulator pressure gauges should be tested frequently to insure accuracy and pressure charts should be checked at time of removal for undue pressure variations or build-ups. Bad order regulators should be repaired promptly, or, if pressure variations are due to inferior design such regulators should be either equipped with sensitizing devices or replaced with regulators of more efficient design. Intermediate or high pressures should be raised and lowered with demands, either manually, or better still, by use of differential type boosters, remote control systems, time-temperature boosters or other such devices. Low pressures should be kept constant when possible; otherwise, they should also be raised and lowered to meet demands.

Designing and Installing

We should also design and install to protect and guard against leakage. In this connection, it is very important that we:

(a) Install pipe mains and service lines large enough for adequate service at minimum operating pressures.

(b) Use meters and regulators of sufficient capacity for minimum operating pressures.

(c) Use good protective coatings on underground installations of steel pipe and equipment.

(d) Use cast iron or coated and wrapped steel pipe for replacements of cold coated steel mains that have failed prematurely, and investigate feasibility of cathodic protection if failures persist.

(e) Construct all installations free from undue strains.

(f) Center all sleeves very carefully and butt ends of pipe together.

(g) Install above-ground installations in places offering maximum protection against vehicular traffic.

(h) Install mains and service lines sufficiently deep to be clear of normal road grading operations.

(i) Disconnect idle equipment promptly if it appears that it will not be used again in the immediate future.

(j) Use shut-off valves, if available, when working against pressure; otherwise use appropriate bags, stoppers or plugs.

(k) Test all installations thoroughly with soap suds or pressure for leaks.

Inspection

When the time arrives, as sooner or later it surely must, for us to make an inspection, we should avoid the customary practice of organizing a sizeable inspection crew and making a sweeping bar test of all underground installations. Such inspec-

tions, however effective, are always slow and needlessly expensive—many lines are bar tested uselessly.

Before proceeding with a leak inspection, we should first assure ourselves that principal losses are due to leakage and not to other possible sources, such as:

(a) Incomplete measurement records.
(b) Incorrect measurement.
(c) Chart miscalculations.
(d) Mistakes in accounting.
(e) Meter misreads.
(f) Overlapping billing.
(g) Adjustments in delivery or sales figures.

As a general rule, the above sources can be eliminated as possibilities by our daily record of low hourly night deliveries. They should not, however, be overlooked as one or more of them can make a monthly statement of unaccounted-for gas look bad. As a matter of fact, they should be guarded against just as carefully as leakage.

Type of Leakage

Since bar testing is slow, tedious and expensive, it should be kept to a minimum; therefore, before proceeding with bar tests, we should first:

(a) Ascertain that leakage has not resulted from damages sustained from road grading or paving operations; telephone, telegraph, or light cable installations; water or sewer line installations; culvert or bridge construction, etc.

(b) Check district regulators stations during an off-peak period for abnormal deliveries. Low pressure district regulators must be weighted for same delivery pressure for this test as rates of flow must necessarily be judged by comparing sounds made by the regulators while feeding. An unusual feed may mean that there is a large leak caused by a broken main, a parted service line connection, or a deteriorated pipe line nearby.

(c) Check all large capacity high and low pressure relief valves for tightness.

(d) Check recording pressure gauges to ascertain that line pressures have not at any time exceeded relief valve settings.

(e) Check all unduly exposed installations to ascertain that they have not suffered damage that has caused them to leak.

(f) Check sealed large capacity industrial meter installations to ascertain that none have been turned on without our knowledge or consent.

If none of the foregoing investigations uncover the source of leakage, our next step should be an effort to determine whether it is in the high or low pressure system, or both. The following tests should prove effective in most cases:

(a) If plant is small enough and its low pressure system is integrated, install a meter across the outlet gate valve of one of the low pressure district regulator stations, cut out the other stations and meter gas delivered into the low system by this one remaining station. Compare the amount of gas delivered by this meter with gas delivered by the city gate meter for the same period. If the gas delivered by the meter at the regulator station is less than that delivered by the city gate station, the difference will, of course represent the leakage in the intermediate pressure system, when due allowance has been made for gas used by customers attached to the intermediate system. If there has been no appreciable change in deliveries, it can be presumed that the loss is in the low pressure system.

(b) If plant is too large for the foregoing meter test, lower intermediate pressure by one-half or at least one-third during an off-load period and check city gate meter for a decrease in deliveries. If intermediate pressure has been lowered as a regular operating practice, then, raise it back to daytime pressures and check for increased deliveries.

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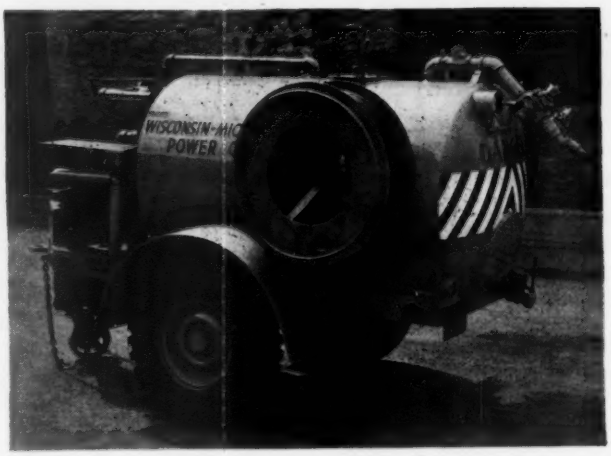

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Having determined from one or the other of the above tests which of our systems the loss is probably in, we should proceed with our inspections as follows:

(a) If loss is suspected as being in lines in downtown section or other congested areas, inspect all curb meter boxes, cut off boxes, manholes, storm sewers, cracks and crevices in pavement, and any other accessible places where leaking gas might accumulate. This inspection can be made by one competent person equipped with a combustible gas indicator. A test of this kind is not amiss at any time because of the proximity of gas distribution facilities to buildings, basements and other structures.

(b) Bar test in immediate vicinities of previous replacements and repairs. If leakage is in low pressure lines bar test first at replacements and repairs closest to low pressure regulator station feeding the strongest.

(c) Bar test remaining lines but confine testing to places showing signs of leakage—gas odors; devitalized and discolored vegetation; permanently damp places; cow lots; cinder fills, etc. Include service lines in this inspection if meters are set at curb or property line; if meters are set at houses, include yard service lines. We should, in most cases, skip places where vegetation is green and healthy as there is very little likelihood of any gas leaks in such places.

(d) Meter test long dead end lines and sections that can be more economically blocked-off than bar tested.

(e) Soap test all house type meter installations—both meter and meter piping.

(f) Bar test all underground facilities not included in any of the foregoing inspections if leak repairs at this point have not effected a satisfactory reduction in losses.

Off-load city gate deliveries should always be checked after making leak repairs which we believe should succeed in reducing losses to a satisfactory figure. This check will indicate how much has been accomplished by the repairs and dictate whether or not we should continue with our inspection.

Odorizing

Properly and closely controlled increases of malodorant in gas will, under certain conditions, facilitate and expedite leakage inspections. The amount to increase the malodorant should, however, be determined by careful experiment as too much increase will invariably result in a flood of customer complaints.

The use of a combustible gas indicator instead of the usual matches for checking for escaping gas will greatly increase the efficiency and safety of a leak inspection. These instruments are so sensitive that they will register the presence of gas in quantities too small to flash, much less light.

The program outlined herein is designed principally for use in smaller properties; however, it will be found that many of the procedures, practices and methods set out are also applicable to even the larger properties.

In conclusion, I would like to remark that all efforts to discover and control leakage in gas distribution systems should be as intelligently and consistently performed and directed as any other function of the business. Gas leaks, like interest on borrowed money, accelerate with time and leaks should, therefore, never be permitted to grow old.

Delivered at the Gas Division Meeting of the Oklahoma Utilities Association held at the Biltmore Hotel, Oklahoma City, September 19, 1947.

Federal Power Commission

East Ohio Gas Co.

The Federal Power Commission has made public an initial decision of Presiding Examiner Ewing G. Simpson recommending the issuance of a certificate of public convenience and necessity to The East Ohio Gas Company authorizing it to construct and operate a 20-inch, 84-mile pipeline to enable it to receive additional supplies of Big Inch gas. The over-all cost of construction has been estimated at $3,200,000.

This initial decision has been served upon the company and parties to the proceedings who are allowed 20 days within which to file exceptions. If no exceptions are filed and a review is not initiated by the Commission within ten days following expiration of the 20-day period, the decision becomes the final decision and order of the Commission.

A temporary authorization to construct and operate the proposed line was issued by the Commission on September 3, 1947. The company has taken preliminary steps and proposes to commence construction no later than February, 1948 and to complete it within four months, the decision stated.

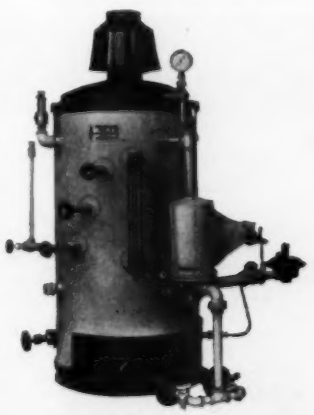
Michigan Consolidated Gas Co.

The Federal Power Commission made public an order authorizing Michigan Consolidated Gas Company and Austin Field Pipe Line Company to construct facilities which are to be used by Michigan Consolidated for transportation of gas received from Panhandle Eastern Pipe Line Company to the Austin Storage Field for subsequent withdrawal for service to the Detroit area.

At the same time, the Commission pointed out that Michigan Consolidated considered it necessary to terminate service to certain important large industrial consumers in Muskegon and Grand Rapids in order to conserve remaining supplies of natural gas produced in Michigan and that it appeared desirable and in the public interest for Michigan Consolidated and Panhandle to arrange as soon as possible for gas received from Panhandle to be served without restriction as to the particular district or market in which the ultimate sales might be made. Panhandle insists that under the Detroit contract gas purchased may not be sold and delivered by Michigan Consolidated outside the Detroit District.

Under the FPC order, Austin Field Pipe Line was authorized to construct a 26-inch or 24-inch pipeline about 140 miles long extending from Austin Storage Field to near Detroit, a metering station at the Detroit terminus of the line, and a gas compressor station of 3000 horsepower at the Austin Storage Field. Michigan Consolidated was authorized to lease and operate these facilities and to construct and operate a 26-inch or 24-inch line extending from the eastern terminus of the Austin-Detroit line to Melvindale, Michigan, and to install certain facilities in and operate its River Rouge Station at Melvindale to transport natural gas received from Panhandle Eastern to the Austin Storage Field and to construct and operate facilities in the Austin field for the storage and withdrawal of the gas.

LATTNER GAS BOILERS
1 H.P. to 45 H.P.



2 H.P. Gas Fired Pressing machine boiler. 100 lbs. ASME Code.

P. M. LATTNER MFG. CO.
CEDAR RAPIDS, IOWA

A. G. A. at the Metal Show

MORE visitors passed through the A.G.A. Combined Industrial and Gas Exhibit than any other single area of the 1947 National Metal Exposition held in Chicago's International Amphitheatre, October 18 to 24. The A.G.A. had the heaviest exhibitionu traffic because it was the largest single exhibit of the entire show, and the 6,000 square foot area spanned the three aisles opposite the main entrance to the amphitheatre.

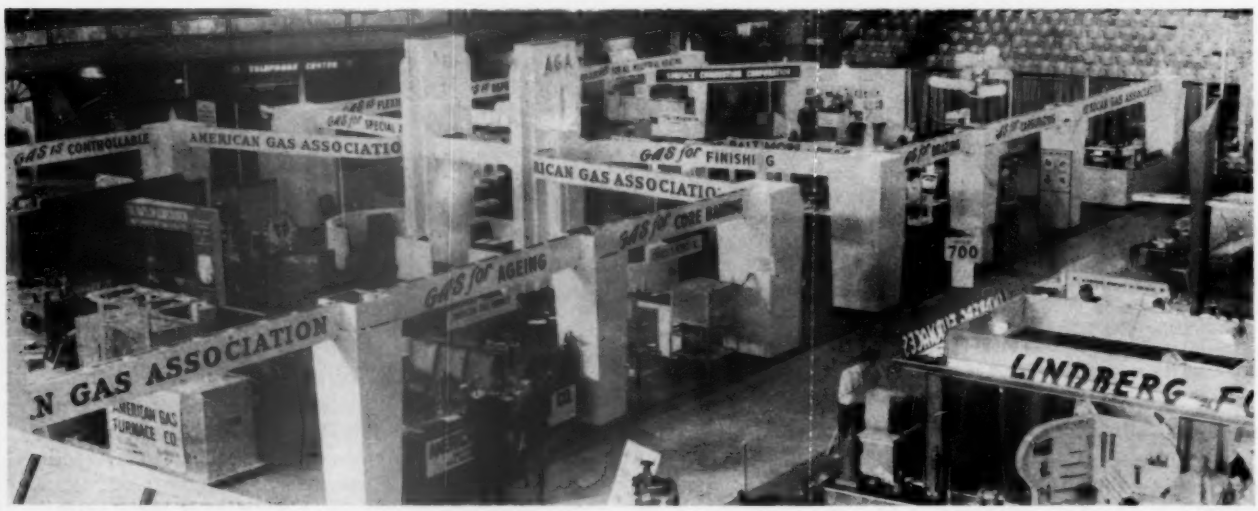
The A.G.A. exhibit area was bordered on the long sides by eight square columns which were connected at the tops by stringers, bearing appropriate legends on both sides, giving the uses and advantages of gas in industry. The familiar A.G.A. color scheme was used throughout, dark blue lettering on white. In the center of the area, the top connecting sections on each side curved gracefully to a group of two pylons on which the letters "A.G.A." were near the tops over a large mechanical flame. At eight other points around the exhibit mechanical flames served as beacons which could be seen from every point of the hall. Around the center pylons an attractive lounge was located in the main aisle which was divided to provide a flow of traffic around each side. Uniform carpeting over the entire exhibit area including the three aisles served further to tie all the individual exhibitors together into the largest and finest Combined Industrial Gas Exhibit ever sponsored by the Industrial and Commercial Gas Section. This opinion was stated repeatedly by the eleven manufacturers of industrial gas equipment who cooperated in making the gas industry phase of the Metal Show the success it was.

Several of the exhibitors had "live" exhibits to demonstrate their burners and other equipment items. Those who were unique in their displays were the Partlow Corporation who had a series of thermocouples over small gas burners to operate their various control devices, and the Sales Corporation of America who had a working model of their continuous high-speed heat treating furnace through which steel rods of varying composition, in sizes from ⅛" to 5/16", were processed at temperatures up to 1800° F. in 10 seconds. The Bryant Heater Company had a furnace chamber set up in which six different burners were installed. Visitors to their exhibit could push buttons to operate the various burners at will. American Gas Furnace Company demonstrated their many burner tips which produce special flame patterns for specialized work. Charles A. Hones, Inc., had two small furnaces, one a muffle type and the other a semi-muffle type operating at 2000° F. and 1600° F. respectively on atmospheric burners. There was also a demonstration table on which several types of burners were displayed and were lit as occasion required. The Eclipse Fuel Engineering Co., and Gas Appliance Service, Inc., also had some of their equipment in service as did the C. M. Kemp Mfg. Co., to demonstrate their gas carburetor. Surface Combustion Corp. had their revolving gas chemistry symbol, new dew point recorder which was set to register the moisture content of the air in the exhibition hall, and an attractive display of precious metals illustrating heat treating processing on gold, silver and platinum in jewelry manufacturing. An industrial immersion heated steam boiler was the main piece of equipment shown by Sellers Engineering Co., and the Lithium Co. had a demonstration forging furnace together with their prepared atmosphere generator, the gas from which flows over a lithium capsule to introduce lithium into the furnace atmosphere.

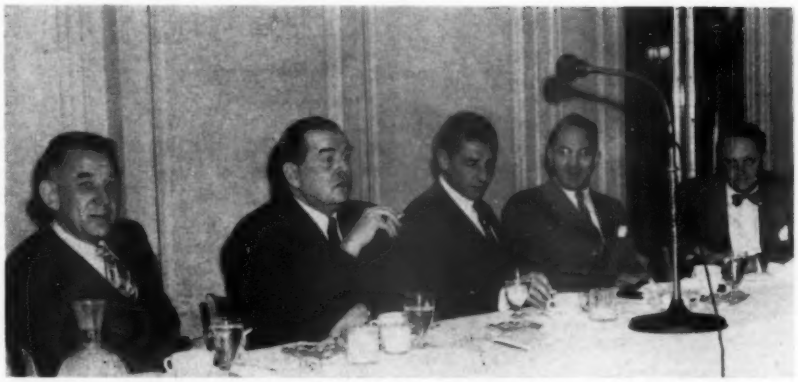
There were several other manufacturers of industrial gas and allied equipment in other areas of the exposition that either had some of their equipment on display or a lounge area. They were: Baker & Co., Inc.; Brown Instrument Co.; Burdett Mfg. Co.; Despatch Oven Co.; Foxboro Co.; Holcroft & Co.; Illinois Testing Laboratories, Inc.; Intercontinental Engineers, Inc.; Minneapolis-Honeywell Regulator Co.; Peters-Dalton, Inc.; Sunbeam Corp.; Wheelco Instruments Co.

Industrial Gas Breakfast

A CAPACITY group of industrial gas men, equipment manufacturers and editors of metals publications sat down to the American Gas Association, Industrial and Commercial Gas Section, Industrial Gas Breakfast during Metal Show week in Chicago. On Wednesday morning, October 22, 1947, in the Hotel Stevens, the 10th anniversary of these breakfasts was celebrated and the presiding officer, Leon



GENERAL VIEW OF THE COMBINED INDUSTRIAL GAS EXHIBITS AT THE METAL SHOW



Head table guests at the 1947 Industrial Gas Breakfast were, left to right: Karl Emmerling, The East Ohio Gas Co., Cleveland; Gerald E. Stedman, writer and guest speaker, New York; Leon Ourusoff, chairman Industrial and Commercial Gas Section; Kent R. Van Horn, who extended official A.S.M. greetings; Carl Wierum, chairman, A.G.M. Metals Committee.

Ourusoff, chairman of the Industrial and Commercial Gas Section paid fitting tribute to Eugene Milener who founded and carried on this now popular and traditional affair.

The official greeting to the breakfast group of the American Society for Metals was extended by Kent R. Van Horn, past president of the A.S.M. after which the speaker of the morning, Gerald E. Stedman, was introduced. Mr. Stedman, a widely known writer and lecturer in the industrial heating field gave a most interesting and inspiring talk to the more than 125 guests assembled in the attractive South Ballroom.

The main point of his talk was directed toward industrial gas men around the topic of "What's Ahead For Industrial Gas." He stated that in spite of present industry conditions of material shortages and curtailments in various sections of the country, gas men should look ahead into the future and prepare now for the time when there will be a need to sell industrial gas again. Mr. Stedman went on to extoll the engineering abilities of industrial gasmen, and gave them full credit for the present wide-spread use and acceptance of gas wherever heat was required for manufacturing or processing. He said that the most important phase of industrial gas was only in its infancy —that of gas chemistry for heat treating in all its forms by means of prepared atmospheres of the many types now available for different results on both ferrous and non-ferrous products. It was the province of the industrial gas engineer, he stated, to explore the possibilities of gas utilization in industry, do the necessary advance engineering to adapt the uses of gas and modern industrial gas equipment to new manufacturing and processing techniques in order that production costs might be lowered and a better product result.

There were many fields, Mr. Stedman stated, that have barely been touched by industrial gas, particularly in powdered metals, plastics, textiles, radiant heating and for continuous processing to replace batch operations. Industrial gas can be geared to the trend to continuous operations, and together with this and other lightly touched fields offers a wide range of opportunities, "a tremendous and very real opportunity for personal advancement, if you are alert."

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Modern Gas Furnaces in Gun Factory

THE U. S. Naval Gun Factory at Washington, D. C., has recently modernized its non-ferrous foundry with the installation of twenty-four gas-fired stationary type crucible furnaces. Arranged in two batteries of twelve each, they line one side wall near an end of the foundry building. One battery is for #275 crucibles and the other battery is for #150 crucibles. All the furnaces are identical, using mixed gas with zero governor and one pound of air. The air is supplied by a series of blowers, one blower for each three furnaces. Those furnaces for the #150 crucibles have a BTU input of 1,200,000 and those with the #275 crucibles have an input of 1,500,000 BTU's. All are fired tangentially by two burners located slightly below the bottom of the crucible, and so adjusted to give a neutral atmosphere thus minimizing the possibility of contaminating the crucible charge. At least 2300° F. can be developed in these furnaces which covers the range of alloys produced in this foundry. It takes approximately two hours to bring a cold furnace up to heat. The furnaces are of standard construction having a 2" silicon carbide lining backed by 4" of dry clay. The base is 2½" x 4½" fire brick.

About 20 different non-ferrous alloys are normally produced by the foundry to accommodate the wide variety of castings demand. Those metals and alloys most commonly processed are, brass, bronze, phosphor bronze, aluminum bronze, aluminum and copper. Each melt is under the closest supervision and metallurgical control to meet the rigid Navy specifications for all castings. Temperature is controlled by the operator who takes periodic pyrometer readings during a melt. There is no holding of metal in the furnaces; it is poured as soon as it has reached the proper temperature for the particular alloy in the furnace. By having the molds ready, contamination is reduced to a minimum. A small laboratory sample is poured from each melt which provides a constant check on all castings produced in this foundry. Although these new furnaces have not been in operation very long, the reports have shown that they are much more economical to operate than the previous installation. Under a non-continuous schedule it has taken approximately 7 cubic feet of mixed gas to melt one pound of metal which makes the cost only 3 mills per pound.

One of the most significant facts observed in this foundry is the high standard of good housekeeping practices. The floors are clean, material and equipment is kept in orderly lines, there are no obstructions in the aisles. In the sand molding section there is no wasteful scattering of sand and no dust. The equipment is kept clean and in good adjustment. In the melting section there was a noticeable absence of smoke and no odor. There is a move afoot in the foundry industry to promote better housekeeping practices to help them produce a better product, reduce rejects and otherwise improve working conditions. The non-ferrous foundry at the U. S. Naval Gun Factory is literally a foundryman's dream come true, and it should set an example to be followed by foundries all over the country.

The gas applications in the foundry are not limited to metal melting. There are gas-fired core ovens of both the car bottom type and the batch drawer type. There are many portable gas torches used in the molding section for special drying operations. There can be no compromise with quality in the production of castings for Navy use and only the best methods of production will assure a continuous flow of quality castings.

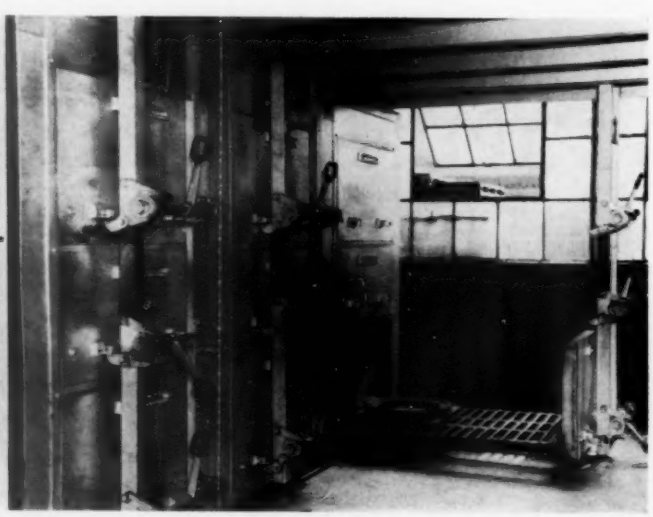
Combustion Systems. A booklet describing gas-fired combustion systems and burners is issued by Surface Combustion Corporation, Toledo, Ohio.

The booklet explains the basic principles of gas-fired combustion systems in an easy-to-understand language. It also describes the four broad classifications of burners: Atmospheric, Immersion, Low and High Pressure types, telling how they function and giving recommended applications.

Sectional drawings of the various types of burner equipment and charts illustrate the text.

Left: A battery of gas-fired stationary crucible furnaces at U. S. Navel Gun Factory, Washington, D. C. The pipes manifolded to each set of three furnaces supplies the air at one pound pressure for mixing with natural gas. This unretouched and unposed photograph strikingly illustrates the good housekeeping practices observed in this foundry.

Right: Cleanliness and orderliness prevail at the U. S. Naval Gun Factory, Washington, D. C. where these gas-fired drawer type core drying ovens are located.



Boston University's New Public Relations School

ON October 22nd, the Boston University School of Public Relations was opened. Mr. Clark Belden, Executive Secretary of the New England Gas Association, made an address in which he discussed the opportunities facing this new Public Relations School. Mr. Belden said in part:

"The establishment of Boston University's new School of Public Relations constitutes a landmark. It is the first such collegiate school in a field which badly needs a number of such schools. This move represents a courageous undertaking on the part of President Marsh, Dean LeSourd and their associates. They are leading a parade that needs good leadership. They will find a host of potential activities confronting the new School. Those who have the best interest of the public relations movement at heart are most interested in the progress and success of the new School.

"Your new School has been established not only in a field which has not yet achieved a well-established status, an accepted philosophical background and a recognized body of tested practice, but in a field which lacks other collegiate public relations schools. Thus, this pioneer venture will find itself forced to hew a virgin path through a large, dense and little explored forest. The exploratory requirements alone will be huge.

"Strangely enough, the public relations movement itself is still in a trial-and-error period even though much time, money, thought and effort have been devoted to this field by business and by other groups for at least 25 years. As your School is a pioneer, it will of necessity start on a trial-and-error basis itself. This would be true to some extent even if the public relations field had already reached a well-established basis. Experiment? Yes. Doubly so and unavoidably so! . . .

"As for problems, I have an optimistic philosophy regarding them. Are they not opportunities? How much of life consists of solving problems or of trying to solve them? If there were no problems, what opportunities would there be? Does not this principle apply throughout our social, economic and political structures—to individuals, to business concerns and to nations—as well as to new schools of public relations?

"When we consider that there have been organized public relations activities for at least 25 years, it may seem that Boston University's new School is being launched years later than it should have been. In a sense, this is true. There is so much constructive work that such a school could have done! Yet, despite this seeming delay, the School makes its bow at an opportune time. We still lack the answers to many important questions touching the public relations field. By no means has all the essential framework of this field been completed. On the contrary, more and more people are coming to see how much exploration should be done, how extensive is its scope and how promptly it should be done to help us determine sound policy and sound procedure. Your new School can achieve research results that can become foundation stones for the public relations movement. . . .

"There are those who say that public relations work constitutes a profession. There are others who say that it should constitute a profession. There are still others who say that it will never constitute a profession. In any event, many people believe that the public relations field needs to travel a considerable distance yet before those engaged in it can be considered to be in a "profession" as the dictionary defines this term and as custom has accepted it. Must we not have true professional performance on a widespread scale—as exemplified in our established professions—before public relations people generally can expect to be classed with surgeons, physicians, teachers, lawyers, engineers, clergymen and other professional men and women? Here is another opportunity for your new School to help elevate public relations objectives, standards, and performance to that level where there will be general acceptance of the professional classification about which we hear so much today.

"Among the several foregoing defects, that of confusion was mentioned first. Illustrating this defect are the following types of endeavor which I have heard called 'public relations' over the years: (1) public speaking, whether directly to an audience, or by radio, or by transcription, (2) legislative lobbying, (3) writing and placing publicity material, (4) advertising work, (5) sales promotion, (6) sales research, (7) general business research, (8) writing speeches, articles, statements, reports, surveys, and other material for top executives, (9) employee educational work, (10) conventional personnel work, (11) contact work to keep important people feeling friendly towards a company, (12) handling emergencies or sour spots as a 'trouble shooter,' (13) customer relations or services, (14) labor relations, (15) stockholder relations, (16) dealer relations or service, (17) complaints, (18) company magazine editing, (19) product demonstrations by direct presentations, by visual aids or by other media, (20) radio work, (21) photographic work, (22) legal work, (23) representing a company at public meetings, business conventions and industry conferences, (24) representing a company in connection with community organizations and activities, (25) perfecting and introducing the use of 'showmanship' along communications lines in connection with group and public contacts. Indeed, what is 'public relation?'

"Glancing elsewhere for a moment, the confusion which permeates the public relations field is illustrated further by the great variation as to the placement of this activity within the operating charts of different companies. For one thing, we can find the following executives acting as public relations directors or public relations men: the publicity manager, the advertising manager, the personnel manager, the labor relations manager, the customer relations manager, the sales promotion manager, the sales manager, the educational director, the assistant to a president, the assistant to a vice president, the auditor, the assistant treasurer, or the assistant secretary. A survey of 1,000 companies would undoubtedly disclose additional unsuspected combinations. Indeed, where does this activity belong?

"Let us approach the public relations field as constructively and as objectively as possible without be-

ing melodramatic about it. Let us stop emphasizing confusion even though it may be the current fad. Let us at least first absorb and apply the many worth-while facts about public relations that are already known. How many of us really know nearly all there is to be known about public relations? Very few of us. That may be confusion but it is our own confusion. Why should our own personal confusion be charged against the whole public relations field? . . .

"The field of leadership certainly offers important 'Opportunities' for your new School because the field of public relations needs the best kind of leadership which it can secure. Here are several possibilities for consideration:

"Play a constructive part in establishing, in advocating and in strengthening (a) sound public relations objectives, (b) sound public relations methods, (c) sound public relations techniques, and (d) both individual and company public relations performance standards generally.

"Help to strengthen the public interest aspects of that which public relations techniques, methods and communication media are trying to sell—whatever the field of the attempted salesmanship.

"Help to strengthen the public interest aspects of public relations techniques and methods themselves—whatever the field in which they are employed and whatever the product, service, cause, or idea they are attempting to sell.

"Encourage business concerns, trade associations, non-profit foundations, educational institutions, organized public relations groups and other related groups to conduct basic public relations research by preparing and presenting desirable research projects for their consideration.

"Exert a constructive influence against unfair business practices such as those covered in cease and desist orders issued by the Federal Trade Commission.

"Exert a constructive influence against unsound public relations thinking, action and proposals.

"Exert a constructive influence in favor of sound objectives, high ethics and constructive methods on the part of all enterprises or causes which utilize public relations programs to help attain part of all of their goals."

Exhibit of Commercial Gas Appliances at Hotel Show

Part of the Combined Commercial Cooking Exhibit sponsored by A.G.A. at the National Hotel Exposition, Grand Central Palace, November 10 to 14.

OVER 125,000 persons visited the National Hotel Exposition at Grand Central Palace, New York, according to Vincent J. Coyle, chairman of the exposition. During the week of November 10-14 it seemed as if everyone of those thousands passed through the Combined Commercial Cooking Exhibit sponsored by the American Gas Association. For five days the more than 4000 square feet of commercial gas cooking equipment display was crowded by visitors anxious to see the latest appliances available. Sixteen cooperating manufacturers shared in the most successful hotel exposition in the history of the industry.

There was an entirely different air to the hotel exposition than in recent years which was due to the ability of the gas equipment manufacturers to promise anywhere from immediate to reasonable delivery dates. More interest was displayed in bright metal equipment than ever before.

Although this was the largest combined exhibit ever sponsored by this Association there was not room enough for all the equipment manufacturers who wished to join in the A.G.A. space. They were scattered throughout the four floors and drew as much attention as those in the combined exhibit.

Those companies cooperating in the combined exhibit were:

American Stove Company; Anetsberger Brothers, Inc.; The G. S. Blodgett Co., Inc.; The Cleveland Range Co.; Detroit-Michigan Stove Co.; Duke Mfg. Co.; Groen Mfg. Co.; Hart Mfg. Co.; Lyons-Alpha Products Co., Inc.; MagiKitch'n Equipment Corporation; J. C. Pitman & Sons Sales Corporation; Robertshaw - Fulton Controls Company; Savory Equipment, Inc.; Specialties Appliance Corp.; Standard Gas Equipment Corp.; Stephen Norton Engrg. Co.

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Recent Court Decisions
Affecting Gas Utilities

What Is Confiscation?

By
Leo T. Parker
Attorney at Law,
Cincinnati, Ohio

RECENTLY a reader wrote in part, as follows: "Our company is defending a law suit involving valid gas rates. The commission already has rendered its report allowing an increase in gas rates. What must we do to convince the court that the commission's findings are correct? Also, is it legal to base rates on present valuation of a gas company's properties instead of the cost when labor and materials were cheap? Please give court cases to assist us."

First, it is important to realize that ordinarily a court will not reverse a commission's valuation of public utility property, or as to the cost of production and distribution of gas, unless there is a clear showing that it has abused its discretion or has omitted to give just consideration to some element in the determination of the rate-base structure, or the rate of return which makes its finding unlawful and unreasonable. As was said by the Supreme Court of the United States, in the case of Federal Power Commission v. Hope Natural Gas Company, 320 U. S. 591:

"If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end. The fact that the method employed to reach that result may contain infirmities is not then important. Moreover the Commission's order does not become suspect by reason of the fact that it is challenged. It is the product of expert judgment which carries a presumption of validity. And he who would upset the rate order carries the heavy burden of making a convincing showing that it is invalid because it is unjust and unreasonable in its consequences."

For other United States Supreme Court decisions which hold likewise see Commission v. Cumberland, 212 U.S. 414; Lindheimer v. Illinois, 292 U.S. 151, at pages 164, 169; and Railroad Commission v. Pacific Gas & Electric Company, 302 U.S. 388, 401, 58 S.Ct. 334, 341, 82 L.Ed. 319.

Hence, the law is well settled that once the Public Service Commission or Public Utility Commission has authorized an increase of gas rates, the opposite party in suit must prove with certainty that the Commission abused its powers, otherwise its findings and decision will be upheld by the higher court.

The latest higher court decision involving these points of law is City of Marietta v. Public Utilities Commission, 74 N. E. (2d) 74, reported August, 1947. Since this court decided several unusually important elements of modern gas rating making law, we shall review this decision in considerable detail.

In this case it was shown that the Public Utilities Commission of Ohio fixed the domestic natural gas rate for gas sold by the River Gas Company to consumers in Marietta. The city appealed to the higher court contending that the rate base is excessive, unjust and unlawful for these various reasons: first, the use by the commission of the reproduction-cost-new-less-depreciation method in arriving at valuation of the company's property is unjust and unlawful; and second, that the allowance by the commission of a 6.5 per-cent rate of return on the rate base is unjust and unlawful.

Actually the real basis of Marietta's complaint was that the commission in its finding failed to give due consideration to the purchase price for which the River Gas Company obtained its property. In other words, the city of Marietta made no complaint as to the finding of the commission on other items which influenced the total cost to the consumer. Such other items included production expense, cost of gas purchased, transmission and administrative expense, federal and state taxes, and depletion of wells and other property.

Here the testimony showed facts, as follows: The River Gas Company; The Hope Construction & Refining Company; The Hope Natural Gas Company and The East Ohio Gas Company was for a period of years prior to 1943 affiliated under their parent holding company, The Standard Oil Company of New Jersey. The Hope Natural Gas Company, a West Virginia corporation, produces, transmits and sells natural gas. One of its customers is the River Gas Company which pays Hope Gas Company 35 cents per M c. f., a price fixed by the Federal Power Commission. Whenever, the River Gas Company has an excess supply of gas on its hands, Hope stores it and returns it, as and when required, for an additional charge of 6 cents per M c. f.

The Hope Construction and Refining Company, hereinafter designated Hope Construction, owned and operated oil and gas properties in Ohio and West Virginia. In Ohio the River Gas Company obtained from Hope Construction two-thirds of the former's total gas requirements. The price which the River Gas Company had been paying the Hope Construction was 25 cents per M c. f.

Influenced by the provisions of the Federal Holding Company Act of 1935, 15 U.S.C.A. 79 et seq., The Standard Oil Company of New Jersey severed its connection with the four companies above named. The Consolidated Natural Gas Company acquired the River Gas Company, the Hope Gas Company and East Ohio Gas Company. The Hope Construction was dissolved. The oil properties in Ohio of the latter company which had been supplying the River Gas Company with two-thirds of its gas requirements, were sold. Of these properties, some had been developed by Hope Construction and some came from The Carter Oil Company. All these properties had been heavily depreciated over the years on the books of the respective corporations. What came originally from The Carter Oil Company to Hope Construction had been depreciated at that time to the extent of 45 per cent of the original value. In other words, the owners of these companies had set up ample

funds to fully reimburse themselves for their original investments as well as to pay themselves an ample return during the operation of the companies. Hope Construction was carrying these properties on its books at $83,000, with a depreciation reserve of approximately $700,000. When the properties were taken over by River, the books of Hope Construction showed that on assets of $763,000 there was an accumulated reserve of $685,000. The River Gas Company, by contract dated January 1, 1943, purchased all these properties from Hope Construction for $82,527.53, and the Public Utilities Commission approved the transfer.

Soon after the River Gas Company acquired these properties, it notified the city of Marietta that it was dissatisfied with the prevailing domestic gas rate of approximately 42 cents per M c. f. with a minimum bill of 70 cents per month, and sought to have the city council increase these rates. The council refused to do so and requested the Public Utility Commission to determine the value of the River Gas Company's property.

The commission made its investigation and submitted a preliminary report. It decided that the reproduction cost value of the property purchased from Hope Construction was $1,250,552.90, less depreciation $889,240.56.

In other words, the valuation of the property purchased by the River Gas Company from the Hope Construction was based on the present reproduction cost, less depreciation. On this basis the commission decided that the present value of the property purchased from the Hope Construction, for rate making purposes, is $889,240.56 although actually the River Gas Company paid for this property only the sum of $82,527.53.

Nevertheless using $889,240.56 as present value of the property the commission ordered into effect an increase in the rate and fixed the average rate for domestic gas at 52.2 cents per M c. f. This rate allowed a rate of return on the value of the property at 6½%. Hence, Marietta contended that the domestic gas rate of 52.2 cents per M c. f. established was too high and asked the court to reduce this rate. The higher court upheld the findings made by the commission, and refused to lower the gas rate saying:

"The rate of return allowed by the commission, 6½ per cent, has ben generally the allowance sustained in many similar cases. . . . As a matter of fact there is much authority to the effect that the reproduction cost new less depreciation is the preferable method to be used in the determination of the fair value of the property of public utilities for rate-making purposes. On the other hand, in determining true value, the courts are not limited to the consideration of the actual investment in the property."

The counsel for Marietta again insisted that the commission should have recognized the price which the River Gas Company paid for this property, namely $82,527.23, as a fair value of the property and not the reproduction cost new less depreciation, because the extra value has already once been paid for by gas consumers somewhere in previous depreciation reserves; and that no law requires consumers to pay twice or permits investors to collect twice. This court said:

"The answer to this claim is that these excessive depreciation reserves were taken before the River Gas Company became the owner of the property and it cannot now be penalized for this practice by its predecessors in title. Its property must be valued as of a date certain and cannot be reduced so as to require a confiscatory present rate of return."

Hence, this higher court definitely held that gas rate based on $82,527.23, the price paid by the River Gas Company for the properties, would be legal confiscation of the gas company's property. Illegal confiscation, of course, violates the United States Constitution.

What Is Confiscation?

The Supreme Court of the United States has spoken on this subject in the case of Board of Public Utility Com'rs v. New York Telephone Company, 271 U.S. In this case it was contended that consumers' rate established by the Public Utility Commission was invalid because the commission based its rate on the present high value of the utilities' property instead of the low price it had paid for the properties. The Supreme Court of the United States upheld the Commission's findings and said:

"The just compensation safeguarded to the utility by the Fourteenth Amendment is a reasonable return on the value of the property used at the time that it is being used for the public service, and rates not sufficient to yield that return are confiscatory."

Also, see Wilcox v. Consolidated Gas Company, 212 U.S. 19; and Bluefield Water Works & Improvement Company v. Public Service Commission, 262 U.S. 679. In both these cases the Supreme Court held that protection against confiscation does not depend on the source of the money used to purchase the property. These courts held that it is enough that it is used to render the service.

And again see Galveston Electric Company v. Galveston, 258 U.S. 388, and Railroad Commission, 262 U.S. 625. In both these cases the Supreme Court held that past losses cannot be used to enhance the value of the property used by a utility or to support a claim that rates for the future are confiscatory. In other words, these courts held that under no circumstances will courts require gas companies to give up for the benefit of present or future subscribers any part of its accumulations from *past* operations. Thus profits of the past cannot be used to sustain confiscatory rates for the future.

This means, of course, that in gas rate litigations the courts will not listen to testimony of high or excessive profits earned in the past by the gas company, nor to excessively low past valuations of its property.

It is true that for a number of years after the public utilities act was adopted by the General Assembly in various states the municipalities generally acquiesced in the interpretation given to the act by courts which was to the effect that the act provides for valuation of utility property by the reproduction-cost-new-less-depreciation method. During this period of low cost of labor and materials, it seems that the gas companies and other utilities challenged the validity of establishing gas rates by reference to the present value less depreciation.

Now, due to higher cost prices, the municipalities are disposed to challenge this method of valuation. However, the courts hold at present that if the original interpretation was sound, it still remains so, even though economic conditions have changed in the meantime. See following cases: Galveston Electric Company v. Galveston, 258 U.S. 388; Gaslight & Fuel Company v. Michigan Public Utilities Commission, D.C., 292 F. 139; City of Minneapolis v. Rand, 285 F. 818, 823; and Georgia Power Company v. Railroad Commission, 278 F. 242.

Independent Pneumatic Tool Promotes B. H. Johns

B. H. Johns, for the past seven years manager of the St. Louis branch of Independent Pneumatic Tool Company, has been appointed manager of the company's mining and contractors tool sales division, with headquarters at Chicago. Mr. Johns has been a member of the Thor sales organization for 21 years and served previously as manager of the Philadelphia branch.

W. B. Smith, former manager of the Houston branch will succeed Mr. Johns as manager of the St. Louis branch, and R. F. Caslin, former Thor electric tool service engineer in the Houston territory, has been appointed to succeed Mr. Smith as Houston manager.

What about tomorrow?

Editor, American Gas Journal
Dear Sir:

There's a lot of talk going around these days about the number of appliance dealers there are in every city, town and village. These dealers, 'tis said, are all doing all right, especially where the utility company has discontinued merchandising.

In talking to several old timers in the business of selling dealers, the consensus of opinions expressed ran something like this. They do not think these new dealers can hang on when and if things get a little rough. As it stands today they are riding a gravy train, they do not have to do any real selling, people come in and take their merchandise away from them, without any quibble on price—literally carry it off, they are so anxious to possess it. This means that this new crop of dealers do not have to have salesmen, they are not concerned with the problems of trade-ins, installation or service and in many cases they have no delivery cost and they do little advertising. And while they are operating on a margin which in normal times would call for some pretty keen merchandising to make a go of the business, they are making real folding money, because of the fact that their turnover is high and they do not have the overhead mentioned above.

Now if we look at the picture as we remember it when times were normal, when the dealer had to employ salesmen to get out and beat the bushes, to advertise, deliver, service and as of old, do considerable trading-in, what do we see? On that basis, it would seem these new comers will have a struggle to make the grade.

It is with these thoughts in mind that many manufacturers representatives are asking "Where do we go from here, what is to be done to keep new appliance outlets in business?" The answer seems to be that if factories are run at full speed and gas mains are to be saturated, there are but two outs; the utility must again enter the merchandising picture, or if the manufacturers wish to continue wide dealer distribution, a wider margin must prevail. This is the time to look to the day when there are plenty of appliances available and that real selling will again be the order of the day, and to plan to tailor our activities accordingly.

Old Timer

Catalogs

Texas Oil and Gas. Yearbook of the Texas Petroleum Industry published August, 1947 and giving official figures for 1946 is issued by Texas Mid-Continent Oil and Gas Association, 907 Continental Bldg., Dallas.

This 48-page annual report, "Texas Oil and Gas, 1947," a source book of official figures on the petroleum activity of the state, emphasizes the scope of oil and gas production, refining, and marketing and its effect on the economy of Texas. Statistics are very complete and comprehensive.

Air Operated Controllers. The Brown Instrument Company, Philadelphia, 44, a division of Minneapolis-Honeywell Regulator Co., has published a 40 page catalog, "Air Operated Controllers," containing valuable information on instruments for the automatic control of industiral processes.

Incorporated in this catalog are complete and accurate descriptions of control instruments for temperature, pressure, flow, liquid level and humidity. Copy on request.

L. P. Gas Plants. Illustrated 8 page bulletin issued by Stacey-Dresser Engineering, 1900 Superior Ave., Cleveland 14, shows recent installations and flow shets of typical high, low and intermediate pressure plants.

Home Laundry Equipment. A four-page tabloid for dealers in Bendix automatic Home Laundry equipment, made its debut in September. It will be issued from time to time by Wilbur C. Jones, sales promotion manager for Bendix Home Appliances, Inc., and be devoted to merchandising national and co-operative advertising as well as sales promotion programs.

Included are articles on a new washer folder, a trade-in direct mail campaign, the current newspaper, magazine and outdoor advertising programs, the training program for retail salesmen, and a picture story on the current million dollar sales contest.

Industrial Air Compressors. Bulletin E-219 of Davey Compressor Co., Kent, Ohio, contains mechanical data and specifications on complete Davey departmental units of 60 - 105 - 160 - 210 and 315 c.f.m. capacities. It also lists bare compressors suitable for installation with customers' motors or as replacement machines.

Tamper-Proof Locking Devices. Lock-Seal, a permanent lock and replaceable seal in one unit, for wing cocks, flat head cocks and meter unions are described in bulletin issued by Mulcare Engineering Co., 53 Park Place, New York 7.

Fluid Meters. Bulletin 233 issued by Bailey Meter Company, 1050 Ivanhoe Road, Cleveland 10, Ohio, explains how the Bailey Area Meter measures fluid flow and totalizes flows through two or more lines. Transmitters may be installed in fuel oil supply and return lines and connected to a Standard Bailey Electronic Recorder to accurately measure fuel oil consumption.

Protective Coatings. Four-page two-color pamphlet gives details of and uses for Koppers Bituplastic, a new plastic protective coating that waterproofs and vapor seals. Special adaptability includes use on above ground tanks, gas holders, storage tanks and towers, cooling towers, metal buildings, roofs, to waterproof and dampproof any wall surface of metal, masonry or concrete. Provides data on types and special recommendations for use of each type. Wailes Dove-Hermiston Corp., Westfield, N. J. (Subsidiary of Koppers Company, Inc.)

Propane-Butane Hose. For handling highly volatile petroleum gases in liquefied form from bulk storage to tank car and from tank car to home storage tanks, Hewitt Rubber Division, Hewitt-Robbins Inc., Buffalo 5, N. Y., has issued descriptive folder on Monarch propane-butane hose.

Constructed of multiple plies of high-tensile, closely woven cotton duck securely bonded by layers of oil-resisting rubber, Monarch hose is designed to withstand the extremely high pressures encountered in propane-butane service and provides high resistance to the permeating action of these gases.

Corrosion Fatigue in Pipe. A 22 page bulletin, 8½ x 11 issued by Spang Chalfant Division of The National Supply Company, Grant Bldg., Pittsburgh 30, describes the problem of corrosion fatigue, its economic considerations, history of the development of the new pipe, reasons for the selection of the thermo-setting plastic, results of the field tests and the laboratory test program, and the story of its manufacture. There are twelve photographs. Copy available on request.

Annealing Metals. Annealing in Surface Combustion Standard Rated Furnaces is described in a new 4 page Bulletin No. SC-135 issued by Surface Combustion Corporation, Toledo 1, Ohio.

The bulletin, appropriately illustrated, defines the various annealing and related processes for both ferrous and non-ferrous metals. A critical temperature range chart showing in color normalizing full annealing, spheroidizing and process annealing ranges and photo micrographs of annealed low, medium and high carbon steels are included. It shows illustrations of both direct fired and prepared atmosphere furnaces, discussing the advantages of each type. Also contains a chart showing the amount of gas saved by correct proportioning of the air-gas ratios for combustion.

New Equipment

Norwalk Valve Company Puts Windows on Check Valves

Norwalk Valve Co., South Norwalk, Conn., has recently announced that their disc check valves can be supplied with observation windows as illustrated in the accompanying photograph.

Disc Check Valve with Observation Window

Instant easy inspection of gas check valves is now possible at all times. Gas flow may be readily observed through the glass observation window, which will hold fully as much pressure as the metal valve body.

These special Norwalk windows can be supplied on sizes up to the large 36" valves, all of which are fully illustrated in Norwalk's new catalogue sheet, Bulletin No. 1000.

New Utility Jackhammer

This new air operated drill has been designed and built for general utility and plant maintenance work. Its light weight and ease of handling makes it ideal for use on a ladder or scaffold.

J-10 Utility Jackhammer

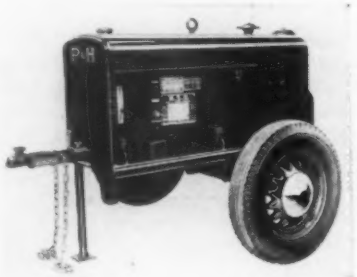
It has strong automatic rotation and uses standard Jackbits. By using adapters, star drills can be used to drill holes 1⅛" and under. Also by removing the rotation pawls or using round shanked tools it can be used as a light paving breaker or for chiseling and channelling, cutting anchor holes or tearing out brick work.

A built-in oil reservoir, in the handle, supplies ample lubrication and is one of the reasons for the low upkeep cost of the tool.

For additional information or an illustrated bulletin, (Form 4065) write Ingersoll-Rand, 11 Broadway, New York 4, New York.

Portable Welder With Extra Power Supply

An important new feature of this portable arc welder is its extra power supply. Offered as optional equipment at small extra cost, the unit provides 1½ kilowatts of alternating current at 115 volts, single phase. This enables operators to hook up electric lights for floodlighting while welding and also permits the use of electric powered tools, such as grinders, chippers, drills. Any universal AC-DC portable tool may be operated from this additional power source. Available as a trailer or stationary model, is an N.E.M.A. rated machine of 200 amperes. The welder has just one control for any desired welding heat, from minimum to maximum capacity.

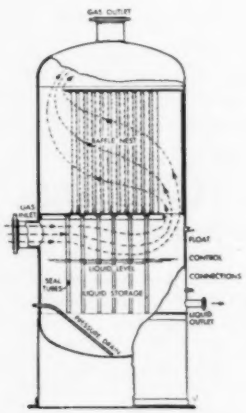


Trailer Model Welder WN200

For further information write Harnischfeger Corporation, Welding Division, 4400 W. National Avenue, Milwaukee 14, Wisconsin.

Gas Separator

Known as the Screenless Mist-D-Fier, this improved gas separator embodies a series of curved welded baffles installed in staggered rows. Gas passing between these baffles must turn sharply to gain the staggered openings of the next row, and so on, through eleven rows. The mist particles are thrown out of the flow by centrifugal action and impinge on the curved surface of the baffle where they agglomerate into a film. Gas impact causes this film to creep along the curved surface of the baffle, forcing the liquid into vertical slots where it trickles down to the bottom of the baffle into seal tubes and flows down to the bottom trap. The clean gas is directed upward to the outlet at the top of the Mist-D-Fier.



Screenless Separator

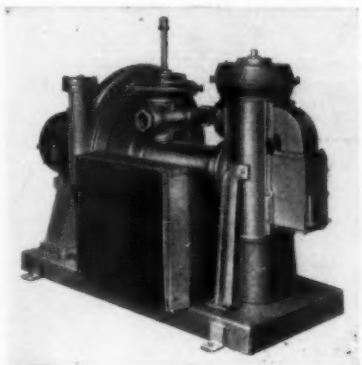
The device removes crude oil from natural gas entering an absorption plant; also oil mist and water from gas leaving the plant. It can be used as a separator between the dephlegmator and the condenser or on the end of the condenser after the accumulator. Other uses are as a separator on the inlet gas to a compressor plant; as a knockout; as a separator for eliminating lubricating oil from any gaseous product; or as a live steam separator for maintaining dry steam.

Bulletin may be obtained from J. A. Campbell Company, 645 East Wardlow Road, Long Beach 7, California.

t and Appliances

McKee Cone-Type Diluters

The McKee Cone-Type Diluter can be used both in industrial plants and for industrial gas manufacturing.



McKee Gas Diluter

It is an automatic Air-Gas Premix Unit employed for such applications as: central mixing stations for industrial plants, central mixing units for single large furnaces or ovens; to dilute high B.T.U. gases to lower equivalents for domestic or industrial distribution; and for standby or replacement of natural or manufactured gas.

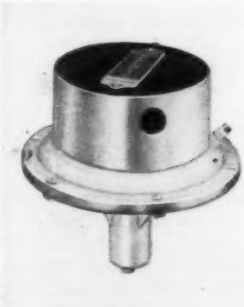
Detailed information in Bulletin L-500 of Eclipse Fuel Engineering Co., 82 So. Main Street, Rockford, Ill.

Republic Control

The Republic "Shure-vent" control is designed for correctly solving low pressure or vacuum control problems. The unit actuates a mercury switch by means of a pressure differential between the upper and lower sides of a diaphragm. The range of adjustment (3 inches water column pressure to 3 inches water column vacuum) means unlimited use in low pressure or vacuum systems. Extreme sensitivity and exact adjustment assures precision control.

Models are available to handle one or two electrical circuits. Manual reset types can be supplied when needed. These latter require the manual releasing of the control before the electrical circuits are re-established.

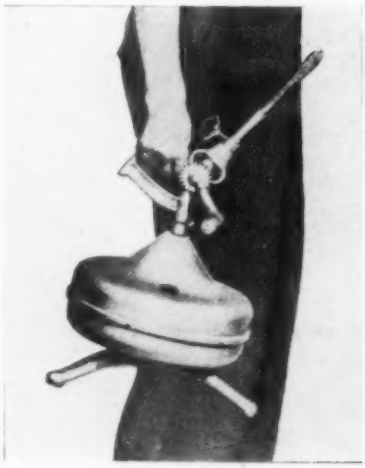
Made by Autogas Company, 2258 Diversey Parkway, Chicago 47, Ill.



Pressure Control

Gas Service Cleaner

Housed in a metal container this tightly spun music-wire rod is used for clearing stoppages in gas service lines. Extreme flexibility will follow through all turns and bends.



Miller Service Cleaner

Speed handle with gear wheels and crank, through which the rod passes is shifted back as the rod progresses. Rods from ¼" to ½" are available in 50 and 75 foot lengths. Gas services up to 1" use ¼" rod. Gas lines 1¼" to 2" use ⅜" rod. When in use the housing will rotate with the rod. Material loosened may be withdrawn by simple vacuum suction equipment.

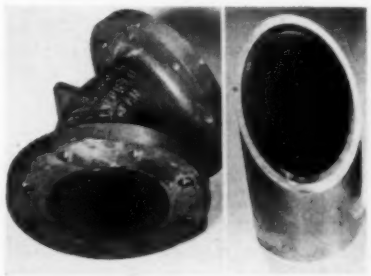
Made by Miller Sewer Rod Co., 4634 North Central Ave., Chicago 30, Ill.

Corrosion Resistant Pipe and Fittings

Development of a new type of corrosion resistant pipe and fittings has been made by the plastics division of The Dow Chemical Company. The company will fabricate the new pipe at its Midland Michigan plant.

The product, Saran-lined steel pipe designed to convey corrosive liquids, combines the desirable features of steel pipe—rigidity and pressure strength—with Saran's extreme resistance to chemicals.

Main use of the pipe is in manufacturing chemicals, and in plants where manufacturing methods necessitate handling highly corrosive chemicals, particularly acids.



45 Degree Flanged Elbow and section of 4 inch pipe cut at angle to show lining

This pipe is resistant to a very wide range of chemicals, oils and solvents. It will satisfactorily carry corrosive sulphuric, hydrochloric, nitric and phosphoric acids. The working temperature of the pipe ranges from 0° to 190°F. depending upon service conditions.

Maximum lengths of 10 feet in sizes from 1 to 4 inches will be manufactured. Fittings, also Saran-lined, include elbows and tees, companion and reducing flanges and gaskets. The latter are made of specially compounded Saran to assure maximum chemical resistance at joints.

Field assembly presents no undue problems. Conventional power tools may be used for cutting and threading and assembly of joints is very similar to that of standard steel piping, the company reports.

As to cost, Saran-lined pipe compares very favorably with other chemical piping. As manufacturing procedures are improved upon, even lower costs may be expected.

A. G. A. Laboratories

Laboratories Operations at Peak Level Approval Plan Aids Market Development

Release by the American Gas Association of the motion picture, "Winning Seals of Approval," emphasizing the consumer benefits of approved gas equipment, most appropriately comes at a time when consumer interest in the Laboratories approval plan is again at high level as well as marking the completion of 22 years of Laboratories operations.

The significance of the plan to the gas industry as well as to the public is reflected in over-all Laboratories operations for the year, services and activities of all departments reaching an all-time peak. Handling without difficulty the sharp rise in appliance production experienced, total 1946-47 services increased approximately 40 per cent over last year, exceeding even the level of war-work years by about 20 per cent.

In releasing its annual report, the Laboratories Managing Committee not only noted that wide distribution of literature describing the plan was made by Association members, but pointed to the plan's contribution to an orderly and intelligent development of the gas appliance market. "Few other industries have been able to proceed as smoothly as far as establishment of basic technical policies and multitudinous benefits derived from a well-oriented and progressive standardization program are concerned," the committee stated. "Despite increased costs of operations, it is estimated that the ultimate cost of the approval plan to consumers remains approximately five cents per appliance."

Increases in individual departmental services ranged from 22 per cent for requirements activities to more than 80 per cent for inspection operations. Testing of appliances for approval increased over 30 per cent while research activities mounted about 50 per cent.

Expansion of the testing department in preparation for an increased volume of work proved adequate to handle an increase of 50 per cent in the number of appliances checked, some 3,000 models having been submitted during the year. Central heating appliances again reflected the industry trend to gas house heating in that testing of such equipment accounted for slightly more than 35 per cent of the total volume. Likewise modern needs for more hot water was reflected in that water heater testing ranked next with approximately 21 per cent. Space heaters accounted for 14 per cent, ranges for 10 per cent, and testing of conversion burners, accessories and miscellaneous appliances comprised the remaining 20 per cent of the total. It is estimated that the grand total of appliances and accessories which have undergone practical performance tests at the Laboratories now stands at a figure of more than 31,000.

New developments in appliances submitted included several innovations. In the space heater field, designs were submitted incorporating in-the-wall construction employing outer wall flue discharge and introduction of outside air for combustion. Unit heaters for the first time employed horizontal instead of vertical tube construction in small types. Water heaters and accessories of more streamlined design appeared. Several clothes dryers and incinerators of new design were tested.

Inspection services to manufacturers, following the general trend of rising appliance production, were greatly expanded over those of the preceding year. Not only was the number of field calls far above that made formerly, but office operations were greatly increased as well. Many new companies entered the gas appliance field and listing of all models and types of equipment in the Directory of Approved Gas Appliances and Listed Accessories consequently required the addition of approximately fifty pages. Most new companies entered the conversion burner, central heating, water heating, space heating and accessories fields.

In the requirements division, the postwar trend toward simplification, revision and coordination of the various sets of gas appliance standards, in keeping with advancing technology and testing techniques, continued throughout the year as an important phase of the work. Revision and simplification of current domestic range requirements represented the major undertaking. Also completed was a separate set of requirements for dual oven type combination ranges. The revised range text represents a reduction of approximately 25 per cent.

Association research assigned to the Laboratories carried forward the broad outline of the national program designed to advance the cause of gas on all fronts. Fundamental studies on technical problems as well as the integration of gas equipment and appliances into present and future building and construction work undertaken in the domestic field.

Resume Conversion Burner Testing

On November 1st the American Gas Association Testing Laboratories will start testing of gas conversion burners under a new set of listing requirements.

Resumption of testing for certification of conversion burners, following its temporary suspension, was approved by the Laboratories Managing Committee after adoption by the Approval Requirements Committee of extensively revised standards covering such burners.

Appropriate notice has been sent to all conversion burner manufacturers on record and the new requirements supplied them. Additional copies are obtainable from the Laboratories in Cleveland and Los Angeles. Listing in the Directory of Approved Gas Appliances and Listed Accessories of burners meeting the new requirements will follow completion of satisfactory test results.

A.G.A. Personnel Conference Attracts 20-State Delegation

Nearly 100 personnel executives from 20 states attended the Employee Relations Conference of the American Gas Association which was held at the Adolphus Hotel, Dallas, Texas, November 19 and 20. It was sponsored by the A.G.A. Personnel Committee, Fred R. Rauch, vice-president and director, public relations, Cincinnati Gas and Electric Co., chairman; Southwest Personnel Conference, W. H. Senyard, director of personnel, Louisiana Power & Light Co., New Orleans, chairman; and the Midwest Personnel Conference, Vernon Myers, assistant to president, Sioux City Gas & Electric Co., Sioux City, Ia., chairman.

Following opening remarks by Willard G. Wiegel, personnel director, Lone Star Gas Co., Dallas, who presided at the first session, and Kurwin R. Boyes, secretary, American Gas Association, the delegates were welcomed to Dallas by C. H. Zachry, president, Southern Union Gas Company. A timely discussion of utility operations under the Taft-Hartley Law, led by Benjamin Werne, counsellor of law and lecturer at New York University Graduate School of Business Administration was the feature of the morning session.

A forum on the topic "Finding Out What Your Workers Think," led by Joseph C. Bevis, vice-president, Opinion Research Corp., initiated the afternoon meeting. Mr. Bevis revealed interesting results of surveys by his firm and outlined various effective methods of making employee surveys.

Home Service Committee Meets

THE first meeting of the 1947-1948 Home Service Committee of the Residential Gas Section of the American Gas Association was held in Chicago, October 27. Elizabeth J. Lynahan, Home Service Director of the Peoples Gas Light & Coke Company in Chicago, presided as Chairman of the Committee. Nineteen members were present to discuss the projects in the new year's Plan of Work.

The Committee will sponsor a national A. G. A. Home Service Workshop to be held in Chicago at the Congress Hotel, January 21-22-23-24, 1948. In this four-day meeting for home service representatives, sales managers, manufacturer representatives, and others in the gas industry, the program will cover all phases of home service operation including demonstrations, gas and equipment explanation and promotion. Special consideration will be given to the application of home service work for inexperienced and newer people.

Preparation of subject matter booklets for use in home service work was assigned to various committee members.

The outgoing 1947 Home Service Committee, under the chairmanship of Mrs. Mary Belle Burnett, Home Service Director, Cincinnati Gas and Electric Company, made available for use in the industry the following booklets: "Third Revision of Home

(Concluded on page 50)

Home Service Committee. Reading left to right—front row: Mrs. Ruth Johnston, Iowa-Illinois Gas & Electric Co., Davenport, Iowa; Mrs. Winnell Simmons, Houston Natural Gas Co., Houston, Texas; Elizabeth J. Lynahan, The Peoples Gas Light & Coke Co., Chicago; Ruth Severson, The Peoples Natural Gas Co., Pittsburgh; Mrs. Pauline Treisch, The Tappan Stove Co., Mansfield, Ohio.

Second row: Mrs. Joan Hodgdon, A.G.A. Testing Laboratories, Cleveland; Celia Bush, Estate Stove Co., Heatrola Div., Noma Electric Corp., Hamilton, Ohio; F. M. Rosenkrans, The Gas Service Co., Kansas City, Mo.; Clara Ridder, Servel, Inc., Evansville, Indiana; J. E. Humphreys, The Ohio Fuel Gas Co., Columbus, Ohio; Jessie McQueen, American Gas Association, New York; Helen Kirtland, The Ohio Fuel Gas Co., Columbus, Ohio.

Third row: Thelma Holmes, Alabama Gas Co., Montgomery, Alabama; Claudia Brandt, The Gas Service Co., Kansas City, Kansas; Beatrice Cole Wagner, The Philadelphia Gas Works Co., Philadelphia; Eleanor Morrison, Michigan Consolidated Gas Co., Grand Rapids, Michigan; Dorothy O'Meara, The Bridgeport Gas Light Co., Bridgeport, Conn.; Mrs. Mary Belle Burnett, The Cincinnati Gas & Electric Co.

Present but not in picture, B. T. Franck, Milwaukee Gas Light Co., Milwaukee, Wisconsin.

Other members of Home Service Committee not present at meeting: Julia Hunter, Lone Star Gas Co., Dallas; Ardis Hubbs, Minneapolis Gas Light Co.; Mrs. Rita Calhoun, Portland Gas & Coke Co., Portland, Oregon; Irene Muntz, Rochester Gas & Electric Corp.; Gladys B. Price, Southern California Gas Co., Los Angeles; Margot Whitmire, Springfield Gas Light Co., Springfield, Mass.; W. D. Williams, Public Service Electric & Gas Co., Newark, N. J.

A. G. A. Activities

New Home Service Chairman

Miss Elizabeth J. Lynahan, Home Service Director of The Peoples Gas Light & Coke Company, Chicago, has been appointed Chairman of the Home Service Committee of the American Gas Association, according to an announcement by Mr. C. S. Stackpole, Chairman of the A.G.A. Residential Gas Section.

A graduate in Home Economics from Cornell University, and with a short experience with the Empire Electric and Gas Company in Geneva, Miss Lynahan became a member of the Home Service Department in the Chicago company in 1934. Appointed District Supervisor in 1938, Miss Lynahan became Home Service Director of the company in 1944.

Home Service celebrated its 25th anniversary in the Chicago company in the summer of 1946. Well-known to Chicago women, Miss Lynahan has built up a particular reputation in large audience demonstrations, not only in the company home service auditorium, but in district theatres throughout the city.

Operating under the department name of Martha Holmes, the slogan, "Call Martha Holmes" is carried in much of the company advertising. An imposing switchboard "manned" daily by at least four members of the home service department, answers thousands of calls on all phases of homemaking.

Home Service Booklet Spotlights the Gas Range

A wealth of information on ways of presenting automatic gas cookery to the public is contained in a new 40-page illustrated booklet, "Home Service Spotlights the Automatic Gas Range," prepared by the Home Service Committee of the American Gas Association. While it was written primarily for the use of gas utility Home Service Departments cooperating in the "Gas Has Got It" national promotional drive to sell automatic gas ranges, it contains a compilation of Home Service information of long-term value. Gas utility salesmen, dealers and manufacturers' representatives and others will find it useful as a sales tool.

"Home Service Spotlights the Automatic Gas Range" is available at 10c per copy. Orders should be addressed to American Gas Association, 420 Lexington Avenue, New York 17, N. Y.

Dr. Chaney to Direct Gas Production Research

Dr. Newcomb K. Chaney, for the past 12 years director of research for The United Gas Improvement Company, Philadelphia, was appointed November 1st to direct the Gas Production Research Program of the American Gas Association. Dr. Chaney takes charge of the work previously directed by Edwin L. Hall who has been appointed directtor of the Association's Testing Laboratories at Cleveland and Los Angeles.

As part of a greatly enlarged research and promotional program now in its fourth year of operation, the Association is engaged in a continuing program of research to find better and more economical ways to produce gas. In pursuit of this objective, gas production research projects are now under way at the A.G.A. Laboratories, in utility plants, and at a number of universities, scientific and governmental institutions outside the industry. Dr. Chaney's work is to coordinate and guide these activities. He is well qualified to conduct this important gas industry program, having spent his entire career on similar work.

Dr. Newcomb K. Chaney

Dr. Chaney spent 25 years with the National Carbon Company, unit of the Union Carbide and Carbon Corporation, first as research chemist and later as assistant research director. In 1935, he became research director of The United Gas Improvement Company to organize an extensive research program on oil pyrolysis for the production of high B.t.u. gas together with the associated hydrocarbon products and chemical intermediates. These developments became known under the general term of the "Ugite Process." Some 200 process and product patents resulted from this work in the following ten-year period.

During World War II, Dr. Chaney acted as chemical consultant for the Office of Scientific Research and Development. He holds the Howard N. Potts Medal for his work in World War I on activated carbon and in 1940 he received one of the Modern Pioneer Awards of the National Association of Manufacturers. The latter was given for inventions of outstanding industrial and economic importance over the previous twenty-year period.

New Research Report Available On Gas Water Heating

Recommending separate research to obtain technical data which could be used to attain a minimum practical fluctuation of temperature of hot water delivered from automatic gas storage water heaters, Research Report No. 1086 of the American Gas Association Testing Laboratories reviews literature presently available on the subject.

The review brings out that additional research will be necessary to correlate past studies of such factors as method of introducing cold water, inlet water temperature, flue design, input rating, size and shape of tank, rate and schedule of draw-offs, standby losses, and cycling. It also charts temperature fluctuations in the water at the top of fourteen heaters on standby test. This study was sponsored by the Committee on Domestic Gas Research.

A.G.A. Adopts "Miss Flame"

"Miss Flame," the attractive little character illustrated here, is now being shown throughout the country adding color and zest to gas industry advertising, displays and promotional material.

Developed and copyrighted by the Association, "Miss Flame" made her debut recently in "The History of Gas," the first of a series of four-color picture story books. Such was her immediate popularity that it was decided to issue a complete advertising and promotional service featuring her.

The Association is now offering a monthly service of two sheets of mats containing a total of 12 different poses in two sizes of "Miss Flame" both with and without gas appliances. "Miss Flame" will also be portrayed with other gas appliances and in other poses in subsequent issues.

News of the Gas Industry

Third Annual Meeting of I. N. G. A. of America

The third annual meeting of the Independent Natural Gas Association of America was held at the Skirvin Hotel, Oklahoma City, October 24th.

During the business luncheon, the Nominating Committee submitted its report which was approved unanimously. This resulted in the re-election of the seven members of the Board of Directors whose terms expired this year and in the election of five new members of the Board. The seven re-elected are: Mark H. Adams, Wichita, Kans.; H. W. Bass, Dallas, Tex.; J. H. Dunn, Amarillo, Tex.; D. A. Hulcy, Dallas, Tex.; E. C. Joullian, Oklahoma City, Okla.; F. S. Kelly, Jr., Shreveport, La.; and C. H. Zachry, Dallas, Tex. The five new members elected to the Board are: R. G. Taber, president, Atlanta Gas Light Co., Atlanta, Ga.; Louis B. Schiesz, president, Indiana Gas & Water Co., Inc., Indianapolis, Ind.; A. B. Paterson, chairman of the board and president, New Orleans Public Service, Inc., New Orleans, La.; R. W. Otto, president, the Laclede Gas Light Co., St. Louis, Mo., and H. K. Wrench, president, Minneapolis Gas Light Co., Minneapolis, Minn.

It was also agreed that the Board of Directors be authorized to select a Director from each of the producing states to serve as regional directors for a one-year term, as provided for by the by-laws of the Association.

At the Board of Directors meeting which followed the general membership meeting, all of the officers who have served during the past year were re-elected to serve for another year. They are: Joseph Bowes, Tulsa, Okla., president; Paul Kayser, Houston, Tex., first vice president; J. H. Dunn, Amarillo, Tex., second vice president; F. W. Peters, Tulsa, Okla., treasurer, and John A. Ferguson, Washington, D. C., executive director.

Sales Manual Issued by Southern Gas Assn.

A sales manual of 150 pages has been issued for utility and dealer gas appliance salesmen by Southern Gas Association, 1230 Mercantile Bank Bldg., Dallas 1, Texas, and sponsored by the S.G.A. Sales Committee.

It is replete with essential information on selling gas ranges, water heaters, refrigerators and house heating. Fundamental sales principles and sales techniques are well set forth.

Basic information on gas fuel and appliances served, enable its use as a textbook for quick reference and for short intensive sales training or a refresher course.

The nine chapters offer a most useful compendium and companion for every gas appliance salesman. Convenient pocket size, 5½ x 8. Price $2 a copy with discounts for quantity.

Pipe Line Extensions in Southern California

Southern California Gas Company of Los Angeles has submitted to the California Public Utilities Commission for approval a proposal to build a distribution system to supply gas to desert communities in the Coachella Valley, 150 miles southeast of Los Angeles, and to reinforce the distribution at Palm Springs, Calif., through a tie-in with the Texas-California pipeline.

The plan was submitted at a hearing of the commission in Coachella, Calif. in October by F. M. Banks and Harold Laub, officials of the Los Angeles company. Testimoney at the hearing brought forth that the noted winter resort of Palm Springs, located at the western edge of Coachella Valley, is the only community in the area involved in the petition which is at present served with natural gas.

The company has also announced plans for building a pipeline southward from Indio to supply gas to the city of Coachella which recently granted Southern California Gas Co. a franchise to provide service

Another extension project which the Southern California Gas Company has underway involves the construction of new pipeline facilities which will make available 5,000,000 additional cubic feet of gas daily for consumer's in the firm's San Joaquin Valley division, north of Los Angeles.

This line is being laid from the Trico natural gas field to Delanco, Tipton and Porterville in the southern section of the valley. Already installed is 10-miles of 10-inch pipe from the Trico field to a point 7½ miles north of the city of Delano.

An interesting feature of 6-inch lines laid by this company to the cities of Delano and Porterville is the fact that the pipe was secured by the Southern California Gas Company from Army surplus and was designed originally for invasion purposes during the war. It is described as light in weight and of high tensile strength. Special couplings with which the pipe came equipped were discarded by the gas company in favor of welding.

Russell & Axon

Russell & Axon, consulting engineers, have announced the removal of their offices to new quarters, Suite 203, Merchants-Laclede Bldg., St. Louis 2, Mo.

Gas Meters Association of Florida-Georgia

Date for the Spring Convention of Gas Meters Association of Florida-Georgia has been changed to April 8-10. The meetings will be held at the Hollywood Beach Hotel, Hollywood, Fla.

CONVENTION CALENDAR

January

21-24 *A.G.A. Home Service Workshop*, Congress Hotel, Chicago.

February

2-6 *Eighth International Heating and Ventilating Exposition*, Grand Central Palace, New York.

March

18-19 *New England Gas Association*, Annual Meeting, Boston.

24-26 *Southern Gas Association*, Galveston, Texas.

29-31 *Mid-West Regional Gas Sales Conference*, Edgewater Beach Hotel, Chicago.

April

5-7 *G.A.M.A. Annual Meeting*, Drake Hotel, Chicago.

7-9 *A.G.A. Sales Conference, Industrial & Commercial Gas Section*, Windsor, Canada.

8-10 *Mid-West Gas Association*, Annual Meeting (place not selected).

8-10 *Gas Meters Assn., Florida & Georgia*, Hollywood Beach Hotel, Hollywood, Fla.

13-15 *Southwestern Gas Measurement Short Course*, University of Oklahoma, Norman, Okla.

14-17 *National Restaurant Association Show*, Cleveland.

19-21 *Motor Vehicle Conference, A.G.A.*, Hotel William Penn, Pittsburgh.

22-23 *Indiana Gas Association Convention*, French Lick Springs Hotel, French Lick, Indiana.

28-30 *Missouri Assn. of Public Utilities* Annual Convention, Hotel Jefferson, St. Louis, Mo.

May

4-5 *Natural Gas Department, A.G.A.*, Rice Hotel, Houston, Texas.

18-20 *Pennsylvania Gas Association, Annual Meeting*, Galen Hall, Wernersville, Pa.

24-25 *New York—New Jersey Regional Gas Sales Conference*, Westchester Country Club, Rye, N. Y.

24-26 *Production and Chemical Conference*, Berkeley - Carteret Hotel, Asbury Park, N. J.

27-28 *Natural Gas and Petroleum Association of Canada*, General Brock Hotel, Niagara Falls, Ontario.

31-June 6. *Liquefied Petroleum Gas Assn.* Annual Convention, Sacramento, California.

Bridge Elected President Southern Counties Gas Co.

On October 22 the board of directors of the Southern Counties Gas Company took action that resulted in several changes affecting the firm's management personnel.

Arthur F. Bridge, who has served as vice president and general manager of Southern Counties since 1939, was elected president and general manager, succeeding as president F. S. Wade, who had served in a dual capacity since 1939 as president of both Southern California Gas Company and Southern Counties Gas Company. Effective October 22, Mr. Wade retired from his post in Southern Counties.

In another important executive change, the board elected Guy W. Wadsworth as a member of the board of directors and vice president and assistant general manager of Southern Counties Gas Company. Mr. Wadsworth, it was announced, will resign as director and vice president in charge of employee relations for Southern California Gas Company in order to assume his new position with Southern Counties.

In a third move, the board of directors elected F. A. Hugh, executive engineer, to vice president of Southern Counties Gas Company.

Mr. Wade, who has been in the Southern Counties Gas Company organization since 1912, will retain his connection with the firm as a member of the board. He will continue to serve as president and general manager of Southern California Gas Co., which is affiliated with Southern Counties through Pacific Lighting Corp.

In commenting on the moves, Mr. Wade stated that the present changes are logical ones made in view of the continuing growth of the two utilities. Southern California Gas Co., today serves approximately 1,000,000 meters, and Southern Counties Gas Co. is presently serving 260,000.

New A. G. A. Cookbook "Food Is Fun"

A 28-page four color illustrated cookbook "Food Is Fun" has just been released by the American Gas Association. Designed primarily to promote automatic gas ranges built to "CP" standards, the book contains a variety of cooking tips which should delight the home-maker and at the same time convince her of the superiority of the modern gas range. It is particularly useful for gas utility companies who want an attractive booklet for distribution to range prospects. Dealers, range manufacturers and others will find it a helpful sales tool.

"Food Is Fun" is available at a cost of 10c per copy f.o.b., Philadelphia, which is considerably below the actual cost of production. Orders should be addressed to the Promotion Bureau, American Gas Association, 420 Lexington Avenue, New York 17, N. Y.

Atlanta Holds Dinner Preview for Dealers and Salesmen

A dinner meeting presenting the American Gas Association's industry wide "Gas Has Got It" promotional program to nearly 300 metropolitan Atlanta dealers and their salesmen was held on October 30th at the Ansley Hotel in Atlanta. This was the first in a series of dinner previews of the new autommatic gas ranges built to "CP" standards to be sponsored by the Atlanta Gas Light Company in cooperation with the manufacturers of Universal, Grand, Caloric, Estate, Roper, Magic Chef, Hardwick and Tappan gas ranges.

Highlighting the meeting was the mass cooking demonstration conducted by nine home service representatives of the Atlanta Gas Light Company and Rich's, Inc. on seven fully automatic gas ranges in operation on the stage. The nine points that women want in their cooking appliances, as brought out in the Elmo Roper survey, were dramatically demonstrated in the following ways:

Best performance features by an oven meal cooked in one of the ranges while the meeting was underway.

Cooks food better by baking layers of cake at one time.

Costs less to operate by baking rolls and broiling fish in a combination oven and broiler at the same time.

Easy to operate by cooking a broiler meal.

Cleanliness by cooking broccoli in a pressure cooker on top of range and wiping vessel on white uniform to show absence of soot or dirt.

Cooks things quicker by making coffee on the high speed flame of the giant burner, having someone in the audience time the procedure.

Cool in operation by melting chocolate on top burner in vessel with white silk scarf tied around it, when chocolate had melted scarf was removed to show that it had not been harmed in any way.

Costs less to operate was illustrated by simmer burners.

Costs less new by pointing out all the values in a new automatic gas range.

Each demonstration was so timed that the foods finished cooking in sequence. All foods cooked were assembled for display and were ready for inspection at the same time. The success of the demonstrations was indicated by the large number of those present, who after the meeting was over, went up to the stage to examine the ranges and the foods prepared on them.

It is believed that this is the first time, at least in this part of the country, that so many ranges have been used simultaneously. It is also believed to be the first time so many competitive manufacturers of ranges have cooperated in a show of this type. Every manufacturer who had an automatic gas range available participated, making the show one of the most spectacular cooking demonstrations ever seen in this section.

The Atlanta Gas Light Company and cooperating range manufacturers plan to duplicate the show in Macon and Rome for the benefit of gas company personnel and dealer salesmen in those areas.

Gas Association Launches Merchandising Program to Aid Architects and Builders

The American Gas Association recently announced a new Certification Program which promises to become an important prestige and merchandising vehicle for architects and builders, as well as affording a reliable buying guide for prospects who are interested in home buying, homebuilding and remodeling.

For the past three years, the Association's national advertising has told consumers of the modernity, beauty and efficiency of modern automatic gas kitchens through its New Freedom Gas Kitchen Campaign. This program has the support of local gas utility companies serving more than 12,000,000 families. These gas utility companies are offering kitchen planning assistance through architects and builders or directly to consumers.

As a natural outgrowth of the present campaign, the gas industry now offers a definite merchandising plan called the Certified New Freedom Gas Kitchen program. Four national requirements have been set up for certification. They are: scientific planning; automatic gas cooking; automatic gas refrigeration and automatic gas water heating sized to take care of all household needs.

Issuance of a certificate for new or remodelled kitchens which meet these requirements gives builders and architects who receive it, the indorsement of a national association that has identified itself as one of the foremost proponents of modernity in living. The certificate gives to the home-owner the indorsement value of nationally advertised names in the gas appliance field which customers today are demanding.

Certificates will be issued to architects and builders by the American Gas Association upon recommendation of authorized persons in local gas utility companies. They are issued by street and number so that blanket indorsement is not given that might lead to later abuse. The program is not intended to rescue shoddy construction projects, but represents the best that the gas industry can offer to the consumer in the way of a buying guide.

The program offers the architect the opportunity to consult with specialists from the gas utility companies who are trained in good kitchen arrangement. It allows architects to capitalize on the millions of dollars spent on national advertising featuring New Freedom Gas Kitchens, thus lending authority to his judgment.

Dealers and bankers will be aided by the program. People visiting new homes for ideas will see nationally advertised, automatic appliances, creating a desire for similar appliances for their own homes. Since the new appliances are written into the original mortgage for new homes thus equipped, banks are assured of greater satisfaction on the part of the home owner and consequently increased protection on repayment of loans.

Pender Elected Chairman GAMA Marketing Committee

Marc. W. Pender, Manager, Market Research Department, of the American Stove Company, has been elected Chairman of the Gas Appliance Manufacturers Association's Marketing Committee for the Association year 1947-48. Mr. R. T. Killian, Manager, Market Development and Research, Bryant Heater Company, was elected Vice Chairman. Mr. Pender, formerly Vice Chairman of the Committee, succeeds Mr. Bradford Corbin, Manager of Market Research, The Coleman Company, as Chairman.

During the war Mr. Pender acted as the American Sttove Company's Washington representative on war contracting. Prior to his Washington service, he was Office Manager of the Atlantic Sales Division for the same company.

The Marketing Committee, composed of leading market research men, was appointed by the GAMA Board of Directors early in 1947. The group studies the marketing needs of the industry and, accordingly, formulates the program for the guidance of the GAMA Statistical Department.

GAMA Appoints Paul E. Dupin Assistant Treasurer

Paul E. Dupin has been appointed Assistant Treasurer of the Gas Appliance Manufacturers Association. Mr. Dupin, who is 32, was formerly associated with the Production Department of the Square D Company, of Elmhurst, Long Island. Previous to that, he did design and development work at the Frankfort Arsenal in Philadelphia.

Paul E. Dupin

Mr. Dupin will assume the duties of Kenneth F. Muldoon, which involve accounting, membership records, publications, and office management of GAMA. Mr. Muldoon has left GAMA to accept a position with Gas Refrigerator Distributors, Incorporated, of New York City.

Air Conditioning Exposition New York, February 2-6

Many striking advances in designs for heating, ventilating and air conditioning will be demonstrated at the Air Conditioning Exposition in Grand Central Palace, New York, February 2 to 6, 1948, affecting all classes of demand-industries, institutions, commercial establishments and homes; and including every known variety of method and apparatus. Officially styled, the 8th International Heating and Ventilating Exposition, the display will occupy all the available exhibition space on four floors of the Palace. It is sponsored by the American Society of Heating & Ventilating Engineers.

Radiant heating systems, including panel, baseboard, radiator and convector systems are engaging increased attention and a number of exhibitors will offer new developments along these lines.

Dominion Natural Gas Co. Change in Executive Personnel

S. B. Severson, President of the Dominion Natural Gas Co., Ltd., has made the following announcement of changes in executive personnel:

Frank D. Howell, Division Superintendent of the North Dominion District of the company has been promoted to Division Superintendent of the consolidated North Dominion and St. Thomas Districts. These districts represent communities in the southwestern part of the Province of Ontario ranging from Hamilton in the east to St. Thomas in the west, and including such places as Brantford, Galt, Ingersoll, Woodstock and St. Thomas. Mr. Howell has been with the Dominion Company or its Cities Service associates over 20 years. He is a past president of the Canadian Gas Association and is active in other community and service clubs. The new high B.t.u. oil-gas plant to be located at Port Stanley will be under his supervision.

Lyle D. Burdick, formerly Division Superintendent of the company at St. Thomas, has been promoted to Division Superintendent of the Niagara Falls Distric of the Republic Light, Heat & Power Co., Inc., an associate company. Mr. Burdick has been with the company or its associates over 20 years. He is a past governor of the Ontario-Quebec Maritime District of Kiwanis International, as well as past president of the Chamber of Commerce of St. Thomas.

Employee Suggestions

A Philadelphia Electric Company employee, S. W. Rubenstein, was elected executive secretary and a director of the National Association of Suggestion Systems at the annual convention of the group held October 16th at Chicago.

One hundred sixty of the nation's largest industries were represented at the conference of the organization which promotes employee suggestion activities in the member companies.

F. A. Denz, of the Remington Rand Corporation, was elected president. Others elected to office were: A. J. Alger, Firestone Rubber & Tire Company, vice-president, and C. A. Guetahl, of Abbott Laboratories, treasurer.

The Philadelphia Electric Company inaugurated its employee suggestion system more than thirty years ago, and rewards employees making suggestions which possess unusual merit.

Employee Relations

Publication of an illustrated guide to personnel benefits and privileges for the more than 7500 employees of the Philadelphia Electric Company, was recently announced. The 68-page handbook, entitled "You and Your Company," is being mailed to each of the utility company's employees.

In addition to setting forth the organization of the Philadelphia Electric's sixty-six departments and divisions, the booklet enumerates the various privileges accorded employees, ranging from medical services to membership in the Company's athletic association. Although many of the standard benefits provided for employees originated before World War I, they are still considered modern innovations in employee relations.

General information about the Company's operations are also noted in the new book, second of its type issued to employees in recent years.

Large Expansion Outlay of Peoples Natural Gas Company

The Peoples Natural Gas Company is spending $11,775,000 this year and next in an attempt to catch up with a backlog of improvements to its system, much of which has been delayed since 1939 due to wartime restrictions, according to E. M. Borger, president.

This outlay is for the drilling of new wells in Pennsylvania building two new compressor stations with a total of 5,000 horsepower, increasing the capacity of underground storage facilities in this state, replacement of several lines with larger and heavier pipe as rapidly as pipe is available, and the enlargement of shop buildings and service equipment for both domestic and industrial customers, Mr. Borger states.

He warns that, in spite of these additions to its service facilities, it will be the winter of 1948-49 before the company hopes to have sufficient gas to meet the upward spiral of demand created by low winter temperatures.

In an announced effort to assure adequate supplies to its present domestic customers, toward which it has initial responsibility, the company recently placed an embargo on gas for additional central heating.

The Federal Power Commission is now allocating gas to the areas where, in its judgment, the gas is most needed, in anticipation of an industrial shortage as prolonged and severe as it was last year. This shortage is expected to not only affect Pennsylvania but to extend from California to the Eastern coast, wherever gas is used.

The principal bottleneck in the whole gas shortage situation, states Mr. Borger, is the inability of gas transportation companies to obtain sufficient pipe to build new lines with which to transport the gas from the fields of the Southwest to sections where post-war demand for the fuel have outstripped even the requirements during maximum war production.

Awards Announced for Lincoln Foundation $200,000 Design-for-Progress Program

The Trustees of The James F. Lincoln Arc Welding Foundation has announced the awards in its $200,000 Design-For-Progress Program. The 467 awards range from $100 for honorable mention to $13,200 for the main award.

The first main award of $13,200 was divided among Mr. Paul F. Hackethal, Chief Engineer, Mr. Clarence C. Mast, Shop Superintendent, and Mr. Douglas W. Hamilton, Welding Foreman, all of the Koppers Company, Aeromatic Propeller Department, Bartlett-Haywood Division, Baltimore, Maryland, for their co-authorship of a paper entered in the Aircraft Classification.

In Division C-1, a $1300 award went to Arthur C. Thompson, Koppers Company, Inc., Bartlett-Haywood Division, Baltimore, Md., subject:—Construction of a 2,000,000 cu. ft. gas holder. Appreciable savings result from the use of bent steel panels welded together. A novel method of caulking the joints prior to welding is described. The holder is of the pur-lift type 180 ft. high and outside diameter of 144 ft.

In Division C-2, award of $100 to D. K. Stephens, Superintendent of Transmission Pipe Lines, Panhandle Eastern Pipe Line Company, Kansas City, Missouri. Subject:—Description of a method of replacing valves in a high pressure gas line without shutting the line down.

In Division N-2, award of $2200 to Joseph B. Smith, Mechanical Engineer, Standard Oil Company (Ohio), Transportation Department, Cleveland, Ohio. Subject:—A description of a method of welding the pipe joints of crude oil and gasoline pipe lines while the line is in service and under pressure.

The many papers entered in the fifteen different scientific and engineering classifications of the Program were submitted from every section of the United States. They covered every field of design in manufacturing, research and maintenance through electric arc welding. Participants included scientists, engineers, production and supervisory personnel, maintenance and methods engineers from both private and large industrial operations.

Bulletin on L.P. Gas Transfer Unit

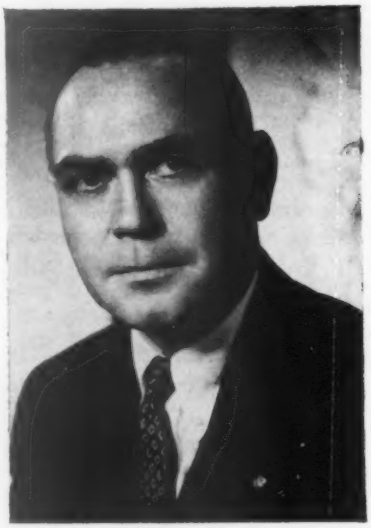
Issued by Brunner Manufacturing Co., Utica, N. Y., is a 16-page descriptive, illustrated bulletin featuring the Brunner pump widely used in L. P. Gas installations.

It is not issued as a handbook of the uses of L. P. Gases, but instructions on how to handle the gas by transfer from one container to another in large volumes by pressure differential. Principles and equipment are described in detail with diagrams.

Methods of filling fuel bottles and care of equipment are included in the bulletin, No. 376. Copy on request.

McClenahan Elected V. P. Kryptar Corporation

The Kryptar Corporation, Rochester, N. Y., makers of amateur photographic films, announce the election of R. W. McClenahan, as vice president.



R. W. McClenahan

Mr. McClenahan spent 16 years in production, sales, and general administration at American Meter Company, New York. A former colonel in the Army Air Forces, he served four years as a staff officer in three overseas commands and in AAF Headquarters, and was awarded the Legion of Merit, the Bronze Star, and the Order of the British Empire for his wartime achievements.

Houston Natural Gas Corp. Promotes J. F. Amberg

J. Fortune Amberg has been promoted to the position of general sales manager for Houston Natural Gas Corp., J. H. Wimberly, vice president and treasurer announces.

Mr. Amberg affiliated with the company in February, 1937 following graduation from the University of Oklahoma. He was office manager for the company at Corpus Christi when he received a commission in the Naval Reserve in 1942. following four years in the Navy, during which period he became a lieutenant, he returned to the company as a member of its residential and commercial sales department. On Oct. 31, 1946, he was made head of that department.

E. N. Heard has been appointed to succeed Mr. Amberg as residential and commercial sales manager in charge of the Houston division. Mr. Heard has been associated with Houston Natural since June, 1928.

Combination Fuel Range

With the introduction of a new type combination range for farm homes which is just beginning to come off the production line, the Kalamazoo Stove & Furnace Company announces that it plans an extensive promotional campaign on this range for next Spring.

This new range, which is really two ranges in one, burns either coal or oil on one side and any kind of gas on the other. The oven is so designed that any fuel can be used.

Rural homes, which have been without kitchen heat, have heretofore had to have two ranges—one a coal range for winter cooking and heating and a gas range for cool summer cooking. The new Kalamazoo combination provides both ranges in one. The coal section can be converted to burn oil; the gas section to burn either manufactured, natural or bottled gas.

The company believes that this new stove will open a tremendous new market in rural areas.

Towne Joins Rheem Mfg. Co.

The appointment of R. Louis Towne as sales promotion manager for Rheem Manufacturing Company has been announced by H. C. L. Johnson, advertising manager, under whose direction he will work. He will make his headquarters in New York.

Mr. Towne joins Rheem from the Eastern Industries Inc., of West Newton, Mass., where he was sales manager of the pump division. For many years he was sales promotion manager for Surface Combustion Corp. of Toledo, O., and during the war was loaned to the British government to design heating systems for Lancaster and Halifax bombers. He has had extensive experience in the heating business and is widely known as a lecturer on heating.

Coleman Co. Appointments

The Coleman Company, Inc., Wichita, Kans., announces the appointment of two new regional sales managers. They are P. W. "Chick" DeGood and Larry Jagoda of the Central and New England Divisions, respectively. DeGood, who has been with the company more than 25 years, was formerly regional sales supervisor in the mass distribution division and Jagoda was formerly a district representative of the New England area.

DeGood's territory will consist of Missouri, Kansas, Nebraska, Iowa, and western Illinois, while Jagoda will represent the company in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, New York City, Philadelphia, Maryland, and Washington, D. C.

It was also announced that C. R. "Dick" McPherson has been named manager of the furnace department of the company's Philadelphia office. McPherson was assistant manager of the floor furnace sales department at the Wichita office prior to his transfer.

Hammel-Dahl Appoints Metrol Co. Sales Representative

Hammel-Dahl Company, Providence, R. I., manufacturers of Automatic Control Equipment, has appointed the Metrol Company, Detroit, Mich., as their Sales Representative. The area to be covered is the Lower Peninsula of the State of Michigan and Northwest Ohio.

R. A. Wright

The Metrol Company has for a number of years specialized in the sales and engineering of automatic control and instruments in the industrial process and power field.

The organization, of which Mr. R. A. Wright is President, includes five Sales Engineers, one Service Engineer, and one Office Engineer all thoroughly trained in Control and Instrument applications.

Syntron Buys New Plant

Syntron Company, Homer City, Pennsylvania, manufacturers of vibratory material handling equipment and portable construction and maintenance tools has purchased the former H. K. Porter Company shell plant at Blairsville, Pennsylvania, twelve miles from Homer City.

This mill type building with cranes, mono rails, indoor railroad loading platforms, etc., will add 100,000 square feet of modern, up-to-date, heavy manufacturing facilities to their main plant at Home City.

Syntron plans to transfer the manufacture of its large, heavy duty vibratory

Plant addition of Syntron Co.

feeders and conveying equipment to Blairsville, which will release space at Homer City, to take care of new products and increased production of its present lines of Electric Tools, Gasoline Hammers, Concrete Vibrators, Paper Joggers, Shaft Seals and other products.

The Company's general offices and headquarters will remain at the Home City, Pennsylvania, plant.

Hamilton Changes in Sales Set-Up

Announcement of two important sales executive appointments was made recently by H. G. Evans, Vice President, Hamilton Manufacturing Company, Two Rivers, Wisconsin.

R. W. Brunsman was appointed Sales Manager of the Professional Sales Division, which includes the Surgical, Dental, Drafting and Printing Lines manufactured by Hamilton. He is assisted by Sales Director V. F. Hall and W. A. Duboc.

R. G. Halvorsen, formerly Sales Director of the Surgical and Laboratory Divisions, was appointed Sales Manager of Contract-Distributor Sales. This includes the Home Appliance Division, Laboratory Equipment Division, Child Craft Division and Contract Sales Division. He is assisted by Sales Director E. E. Merrett of the Child Craft Division and Paul A. La Roche, Sales Director, Home Appliance Division.

Hamilton also appoints four in the Home Appliance Division. R. G. Halvorsen has announced the following: Sales Director of the Home Appliance Division will be Paul A. LaRoche. Mr. LaRoche, Hamilton's first Eastern representative on the company's Automatic Clothes Dryer, returns to head up dryer sales. He will headquarter at the main office and factory in Two Rivers, Wisconsin.

In charge of the Eastern territory will be W. N. Brown, who has just completed an extensive trip through his new territory. He comes to Hamilton from the position of Service Superintendent at the Palmer House, Chicago, Illinois.

Don H. Davidson has been placed in charge of Hamilton's Mid-West territory. Mr. Davidson formerly was with Midwest Associates of Aurora, Illinois. There he specialized in Sales Planning and Promotion.

New Service Manager is N. B. Wood, with Hamilton since 1936 except for five years' war service. He brings to his new responsibility a wealth of practical experience. Mr. Wood formerly was Production Manager of Ray-O-Vac Company, Madison, Wisconsin, and Factory Manager of The Metal Ware Corporation, Two Rivers, Wisconsin.

Fluor Corporation Provides Service Department

The Fluor Corporation, Ltd., Los Angeles, announces the establishment of a Customer Service Department to handle the servicing of their various products of manufactured equipment. Mr. E. L. Bishop, who has been employed by Fluor for twelve years in the Manufacturing Department, will be in charge of this service for the mid-continent area, which will be located in Houston, Texas.

GPM
IRON HYDROXIDE
The mark of
unerring dependability
in purification
GAS PURIFYING MATERIALS CO., INC.
3-15 26th Ave.
Long Island City 2, New York

CLEVELAND
"A" TYPE METERS
"B" TYPE METERS
DIAPHRAGMS
Cleveland Gas Meter Co.
ESTABLISHED 1875
2009 Rockwell Ave., Cleveland 14, O. Phone CHerry 2351

New Heating Guides for Architects, Builders, and Heating Engineers

Publication of a series of elaborate and carefully documented Heating Guides for architects, builders and heating engineers by the Janitrol Division, Surface Combustion Corporation, Toledo 1, Ohio, aims to provide specific technical information relative to best applications for various types of heating systems, most suitable arrangements of ducting, furnace locations, etc.

Floor plan examples, building sections showing suitable ducting, locations of registers or convectors, suggested specifications covering installations, and other details for gravity and forced air circulation systems, radiant floor and wall panel systems for either warm air or hot water systems, recommended conversion burner installations, systems for both single and multiple dwellings with and without basements, commercial and industrial systems are all treated in the series of guides. Color has been extensively used to clarify the various drawings and plans. Ten guides in all will be published, three of which are now available, with a fourth ready within a few weeks. Each guide is suitably tabbed for ready filing.

The three guides now ready are entitled "Winter Air Conditioning," A.I.A. No. 30B, "Gravity Warm Air Heating Systems," also No. 30-B, and "Conversion Burners for Remodeling," A.I.A. No. 30-C-4.

Servel Recipe Book

A new and interesting recipe book has been released by the Homemaker's Institute of Servel, Inc. This 64 page book has several very unique features. The first of these is the outside two color cover which is finished with water resistant varnish for durable use in the kitchen.

The book includes a section on nutrition which carries forward the extensive home nutrition program which Servel sponsored for the U. S. Department of Agriculture during the war. It covers the seven basic food groups, and also includes a chart of how they should be stored in the refrigerator.

The second section covers the nutritive value of frozen foods, how to store them, and an extensive coverage on their thawing and preparation.

The balance of the book is given over to recipes which are presented in a rather unusual fashion. The typographic arrangement of each recipe is such that all ingredients stand out from the balance of the directions.

This book is distributed free to all purchasers of the Servel Gas Refrigerator, and is available to anyone at 10c a copy.

C. W. Prewett, Jr. Dist. Mgr. Pacific Gas Corp. at Chicago

The Pacific Gas Corporation, specialists in liquefied petroleum gas, annonnce the appointment of C. W. Prewett, Jr., as district manager of the company's new Chicago sales and engineering office at 20 North Wacker Drive.

Lightbody Assistant to President Bryant Heater Company

Announcement is made of the appointment of James D. Lightbody, Jr., as assistant to President Lyle C. Harvey, of Bryant Heater Company, Cleveland, Ohio.

Mr. Lightbody began his career as design and factory engineer at United Shoe Machinery Company, Beverly, Mass. In 1941 he joined Thompson Products Company, Cleveland, and by 1944 had become a general foreman, after which he entered the army and served as a maintenance instruction office, Ordnance, at Aberdeen Proving Ground, Maryland. He returned to Thompson Products in 1946, where he remained until recently as divisional and staff industrial engineer and assistant to the factory manager of the valve division.

A. B. Cameron Vice President Ruud Manufacturing Co.

Election of A. B. Cameron of Morristown, New Jersey, as vice-president and general manager of the Ruud Manufacturing Company, Pittsburgh, Pa., makers of gas water heaters, has been announced by R. H. Lewis, Ruud president.

Mr. Cameron, prior to the war was successively sales manager and manager of the Philgas Division of the Phillips Petroleum Company. Later he was vice-president of the Grand Home Appliance Company, Cleveland, Ohio, and comes to Ruud after serving as vice-president of the Suburban Propane Gas Corporation, large eastern distributor of liquefied petroleum gas. Mr. Cameron assumes his new duties December first, with headquarters at Ruud's general offices in Pittsburgh. No other changes in the Ruud management have been made.

Fluor Corporation Announces New Management

The Fluor Corporation, Ltd., Los Angeles, has announced its new managerial organization following a special meeting of the board of directors on September 18, which was necessitated by the recent untimely death of the company's president and chairman of the board, Peter E. Fluor.

Shirley E. Meserve, vice president and general counsel, was elected president. W. Earl Dunn, vice president and general manager, will now serve as executive vice president; D. W. Darnell, vice president and chief engineer, was promoted to vice president and general manager; and J. Robert Fluor, manager of manufacturing, was named vice president and assistant general manager. James P. Wiseman, director of sales, and T. H. Seavey, manager of purchases, both were made vice presidents. Francis E. Fischer continues as secretary-treasurer.

Robert L. Merrick, assistant chief engineer, was elevated to chief engineer, and Foster M. Stephens, director of development, was advanced to assistant manager of manufacturing.

"Biggest Inch" Pipe Line

In the November issue of *News Meter*, published by San Diego Gas & Electric Co., attention is focused on the "Biggest Inch" pipe line from Texas to California, soon to be completed.

Discussion of this line dominated the business sessions of the recent Annual Convention of Pacific Coast Gas Association.

The California section of the pipeline is 30-inch diameter pipe, the largest ever to be used for fuel transportation. That the pipeline is a spectacular construction project was illustrated in a motion picture showing the pipe being laid across some of the most rugged terrain in that section of the country. It was pointed out to convention delegates that the pipeline's daily delivery will be, in terms of energy, 5 times the energy generated by Hoover Dam.

At its terminus at Santa Fe Springs, near Los Angeles, the new pipeline will deliver 305 million cubic feet of natural gas daily. The significance of this supply is great. It literally ends any fear of natural gas shortage in the southern California area. It means that California's gas industry, which has weathered postwar reconversion well and which has progressed steadily since the war, may be confident of further progress and expansion.

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Wanted for early delivery, Two Meter Provers, Water Testing Machine, Testing Gauges, and miscellaneous equipment. Used material acceptable. Address Box 175, c/o American Gas Journal, 53 Park Place, New York 7, N. Y.

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Because of a new retirement plan, we are in need of a competent man to take charge of our gas meter shop. We have 25,000 tin and iron gas meters. Please give age and experience in first letter. Write Box 179, c/o American Gas Journal, 53 Park Place, New York 7, New York.

Gas Property Manager Available

Will take over a gas property in city from 5,000 to 50,000 population or larger. Management or outright purchase. Address Box 180, c/o American Gas Journal Inc., 53 Park Place, New York City 7.

Resin Plant Equipment. Blaw-Knox Company, Pittsburgh, Pa., has issued Bulletin No. 2087 entitled "Resin Plants and Equipment," a 24-page pamphlet to describe and illustrate a variety of plants and equipment for the resin industry and allied fields.

Complete Plants. Blaw-Knox has also issued Bulletin 2204, a 24-page illustrated booklet entitled "Complete Plants and Equipment for the Process Industries." Applications reviewed include organic synthesis, liquefied gas handling, electro-vapor heating systems, rubber reclaiming, molding resin production, fat splitting, oil and fat hydrogenation, gas dehydration, high pressure processing and solvent recovery.

An Actual Installation of the only Thermostatic-Instantaneous Gas Water Heater

This installation has been in operation for the past 8 years in the football clubhouse of the Orange High School, and has required no service. These 2—#3s replaced a 500 gallon tank and heat 300 gallons per hour (60 Rise). 10 to 20 boys take a shower at one time under 4 large showers. This type installation can be used for Baptistries, Launderettes, Dishwashers or any hook-up requiring a large quantity of hot water.

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Texas-L.A. Pipe Line

(Continued from page 13)

Status of Calif. Gas Reserve

In hearings before public regulatory bodies, held in California and Washington, D. C., when the pipeline from Texas was proposed, it was brought out that several elements in the natural gas reserve picture in California indicated the advisability of augmenting the supplies from out of the state.

Reserves in California, it was disclosed at the hearings, are still large, and at present are probably adequate to meet all normal demands. However, evidence was submitted to show that California is experiencing a tremendous growth in population, as well as a steadily increasing expansion in business and industrial activity, and that the gas supply must constantly be augmented to fill the steadily mounting requirements of the residential and industrial load.

Testimony at those hearings brought out also that California companies had up to that time been dependent to a very large extent on "casinghead gas," produced as a by-product of oil production. In prewar days of oil production, all the gas produced with the exception of that used by the oil producers themselves for their operations, was available for distribution by gas companies. Up to recent years, therefore, the gas companies there had a comfortable margin to meet the exceptional peak day periods that occur during the winter months.

By 1941 a change in the methods of oil production, wherein large volumes of gas are used for repressuring oil wells, plus heavily increased industrial demands brought about by the war, had materially altered the situation, and California gas companies were faced with a continually diminishing margin of surplus gas.

It was to correct that situation that two Los Angeles gas companies began negotiations for Texas gas, culminating in the building of the present pipeline.

Home Service

(Continued from page 41)

Service Home Calls" (20c), "Home Service Training on the Job" (10c), and "Home Service Spotlights The Automatic Gas Range" (10c). The latter booklet has special timeliness as it was prepared to support national A. G. A. promotion on modern gas ranges in the campaign; "Gas Has Got It".

Early in 1948 another booklet "Home Service Activities", now being completed will be available. This is one of the booklets of the home service manual and is a companion piece to "Home Service Home Calls".

Dakota Lignite Pilot Plant Operation Reported

Experimental work just completed by the Bureau of Mines in a pilot plant at Grand Forks, North Dakota, shows that more than 900 billion tons of lignite in three Western states is a potential source of fuel gas for beneficiating iron ore, making hydrogen, and other industrial uses, according to James Boyd, Bureau Director.

This represents the first full-scale successful attempt to manufacture water gas from lignite and subbituminous coal by a continuous process in an annular vertical metal retort, Director Boyd said.

Water gas with a heating value of 300 B.t.u.'s per cubic foot was produced from natural lignite, the report shows, this being considered a satisfactory yield from such low-rank solid fuel. The over-all efficiency of the pilot plant was 72 per cent extraction of the total fuel energy in the lignite processed. Final determination of the economic practicability of the Bureau-developed technique will depend upon further research.

Lignite reserves of North Dakota, Montana, and South Dakota add up to about 915 billion tons and constitute about 98 per cent of the country's total lignite reserves. Lignite itself represents nearly one-third of America's total solid fuel reserves, which include all grades of bituminous and anthracite coal.

Difficulties of using lignite as a fuel have resulted in a low annual production rate, Director Boyd stated. Only 2,668,310 tons of lignite were mined in the United States in 1945, Bureau statistics show, of which 2,522,319 tons came from North Dakota. Most of this was mined by open-pit, or stripping, methods. Lignite generally contains 30 to 40 per cent moisture, and when dried in air, the coal slacks and ignites, making it difficult to store for long periods or to ship to distant points of consumption. Lignite usually has a heating value about half of that of the best bituminous coal.

For a number of years the Bureau of Mines has been interested in developing new uses for lignite to conserve high-rank coals and to promote the industrial development of the Great Plains states. The Grand Forks gasification pilot plant was put into operation following similar experiments on a smaller scale at a pilot plant at Golden, Colo. The current report released by the Bureau covers operations at both pilot plants and draws a comparison between small and large pilot plants.

In reviewing the experiments, the publication points out that water gases capable of meeting a wide variety of industrial needs can be obtained by controlling the rate of internal steaming and the temperature around the externally heated retort. The investigations also confirmed results obtained during the operation of the smaller plant by proving that 50 to 90 per cent of the carbon in natural lignite can be converted to water gas in a single pass through the retort.

The cost of producing industrial gas from lignite by the new process compares favorably with that of other competitive processes, the report emphasizes, and under normal operating conditions a metal alloy retort should last from 10,000 to 20,000 hours.

The Bureau's 69-page progress report for the 1945-46 period presents details of the design, construction and operation of the Golden and Grand Forks pilot plants. Numerous illustrations and diagrams of the operating techniques employed at the Grand Forks plant are also included in the report. The publication was prepared by V. F. Parry, fuel technologist and supervising engineer of the Bureau's Subbituminous Coal and Lignite section at Golden, Colo., D. C. Gernes, former Bureau chemical engineer stationed at Grand Forks, N. D., E. O. Wagner, and J. B. Goodman, Bureau chemical engineers stationed at Golden, Colo., and A. W. Koth, Bureau chemical engineer stationed at Grand Forks, N. D.

A copy of Report of Investigations 4128, "Gasification of Lignite and Subbituminous Coal, Progress Report for 1945-46" can be obtained by writing to the Bureau of Mines, Publications Section, 4800 Forbes St., Pittsburgh, Pa.

Perfection Stove Co. Names New Home Economist

Perfection Stove Company announces the appointment of (Mrs.) Arlyne Hoffman as Home Economist. She will supervise the kitchen-testing of Perfection and Ivanhoe ranges, cookstoves and ovens in the company's modern kitchen, which is a part of its million-dollar research center.

Mrs. Hoffman will be in charge of Perfection's modern experimental kitchen, which has been visited by home economists from all over the United States.

New Syntron Co. Catalog

Syntron Company, 920 Lexington, Homer City, Pa., announces a new complete 92 page catalog, profusely illustrated, and describing their complete line of Vibratory Material Handling Equipment which includes electromagnetic vibrators, packers, vibratory feeders, dry feeder machines, weighing feeders, vibrating grizzlies, vibrating lawns, paper joggers, hopper level switches, explosion-proof hydraulically operated feeders, vibrators, jolters and feeder machines and mechanical shaft seals.

Also, their Construction and Maintenance Tools which include self-contained gasoline hammer paving breakers, portable electric hammers, drills, grinders, sanders, electro-magnetic form vibrators and flexible shaft concrete mass vibrators.

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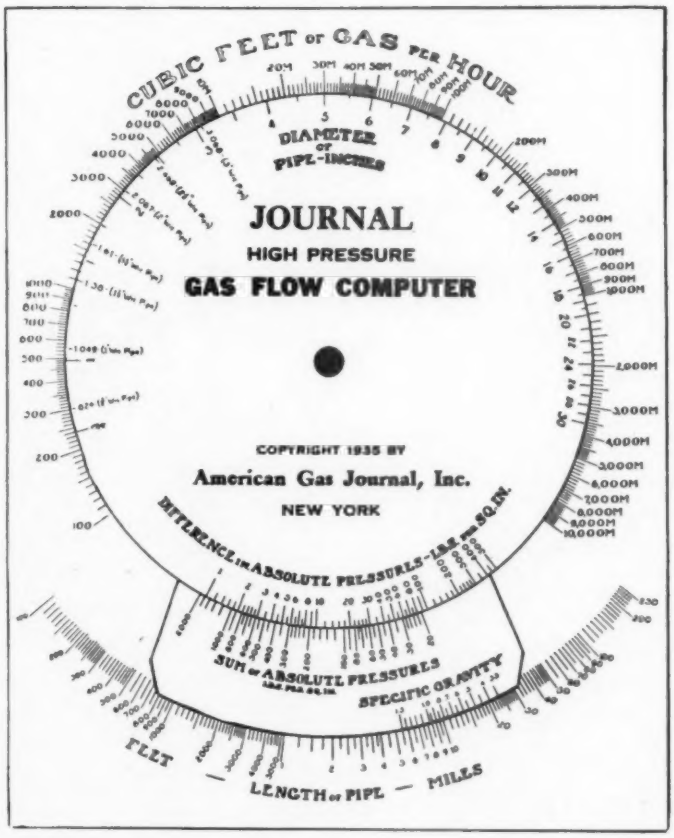
"Journal" Gas Flow Computers



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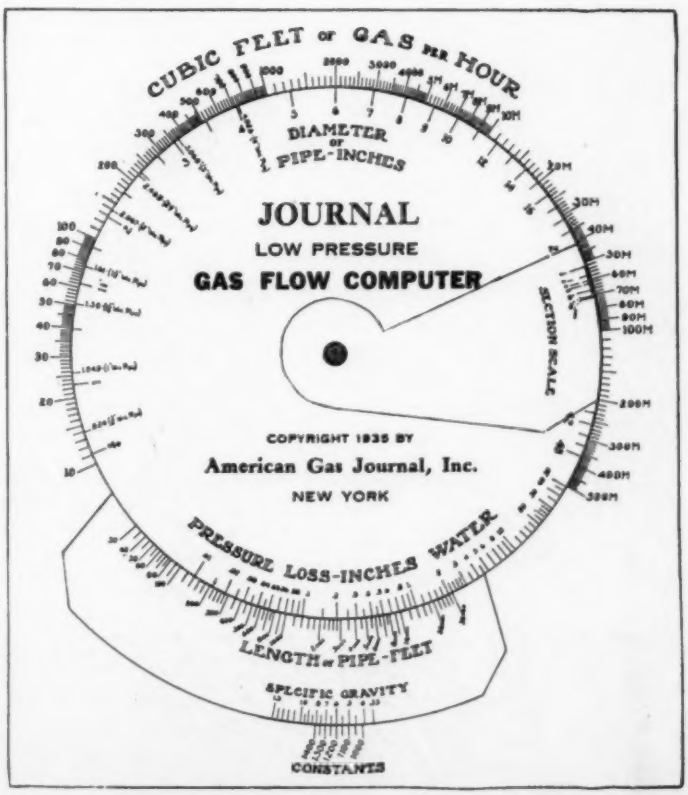

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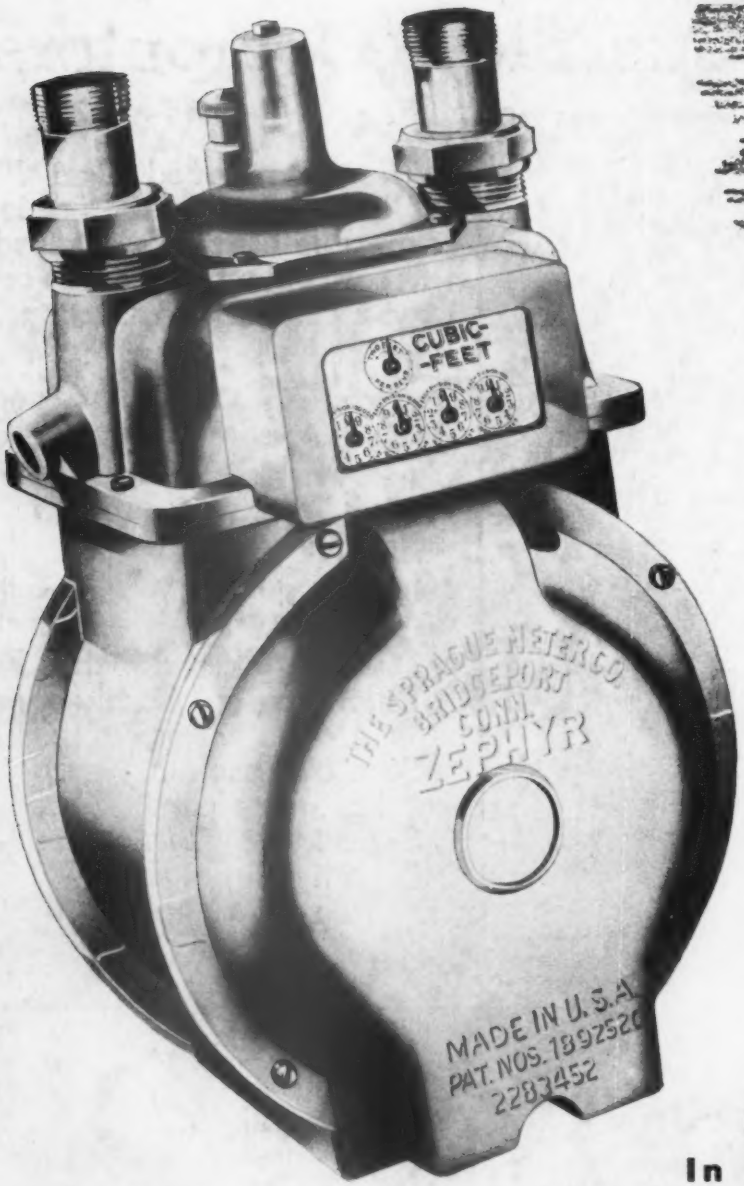

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